

BENTON HARBOR POWER PLANT LIMNOLOGICAL STUDIES

PART XII. STUDIES OF THE FISH POPULATION NEAR THE DONALD
C. COOK NUCLEAR POWER PLANT, 1972

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STUDIES OF THE FISH POPULATIONS NEAR THE
DONALD C. COOK NUCLEAR POWER PLANT, 1972

INTRODUCTION

Much concern has been expressed about possible environmental impact of nuclear power plants on the fish population of an area. Necessary research answering some of the pertinent questions is being sponsored by the Michigan and Indiana Power Company for the Donald C. Cook Nuclear Power Plant located at Bridgman, Michigan, on Lake Michigan. Fishing operations, in the form of monthly sampling surveys, were begun in the vicinity of the Cook Plant site during May, 1972, and continued through November. These investigations are being conducted to supply data in the following areas:

For adult fish -

1. Establishing species composition and indexes of abundance for fish at the site area
2. Determining what species use the area for spawning or as a nursery grounds
3. Determining the species and size of fish entrained in the Cook plant cooling-system waters

For larval fish -

1. Establishing what species (if possible) are present at the site and their seasonal and depth distribution
2. Determining the number of larvae which pass through the plant's water cooling system

Information gathered now on the fish populations of the area will be used to evaluate effects of thermal discharge on the fisheries. Pre-operational studies will continue as well as intermittent entrainment monitoring, depending on pumping schedules.

MATERIALS AND METHODS

Study Area

The Donald C. Cook Nuclear Power Plant is located on the shores of Lake Michigan in Berrien county near Bridgman, Michigan. Stations were established in the vicinity of the plant site for seining (stations A and B, Fig. 1) and for trawling and gillnetting (stations C and D, Fig. 1).

Physical and Limnological Data

For each time a particular fishing gear was used information on weather and other conditions was collected. Wind direction and speed were obtained using an anemometer when aboard the MYSIS, and estimated at other times. Wave direction and height was visually estimated. Water temperature for trawls, gillnets, and larval tows were procured at the surface and the fishing depth using a battery-operated tele-thermometer. A glass mercury thermometer was used during beach seining.

Beach Seining

Beach seining was conducted only during periods of relative calm using a 38.1 m x 1.8 m (125 x 6 ft) nylon bag seine having 0.5 cm (0.25 in) bar mesh. The seine was first stretched perpendicular to the shoreline, and then pulled parallel to the shore a distance of 61 m (200 ft). Two to four consecutive, non-overlapping collections were taken in this manner

Collection stations:

- A - beach seines
- B - beach seines
- C - 6.1 meter trawls and gillnet sets
- D - 9.1 meter trawls and gillnet sets

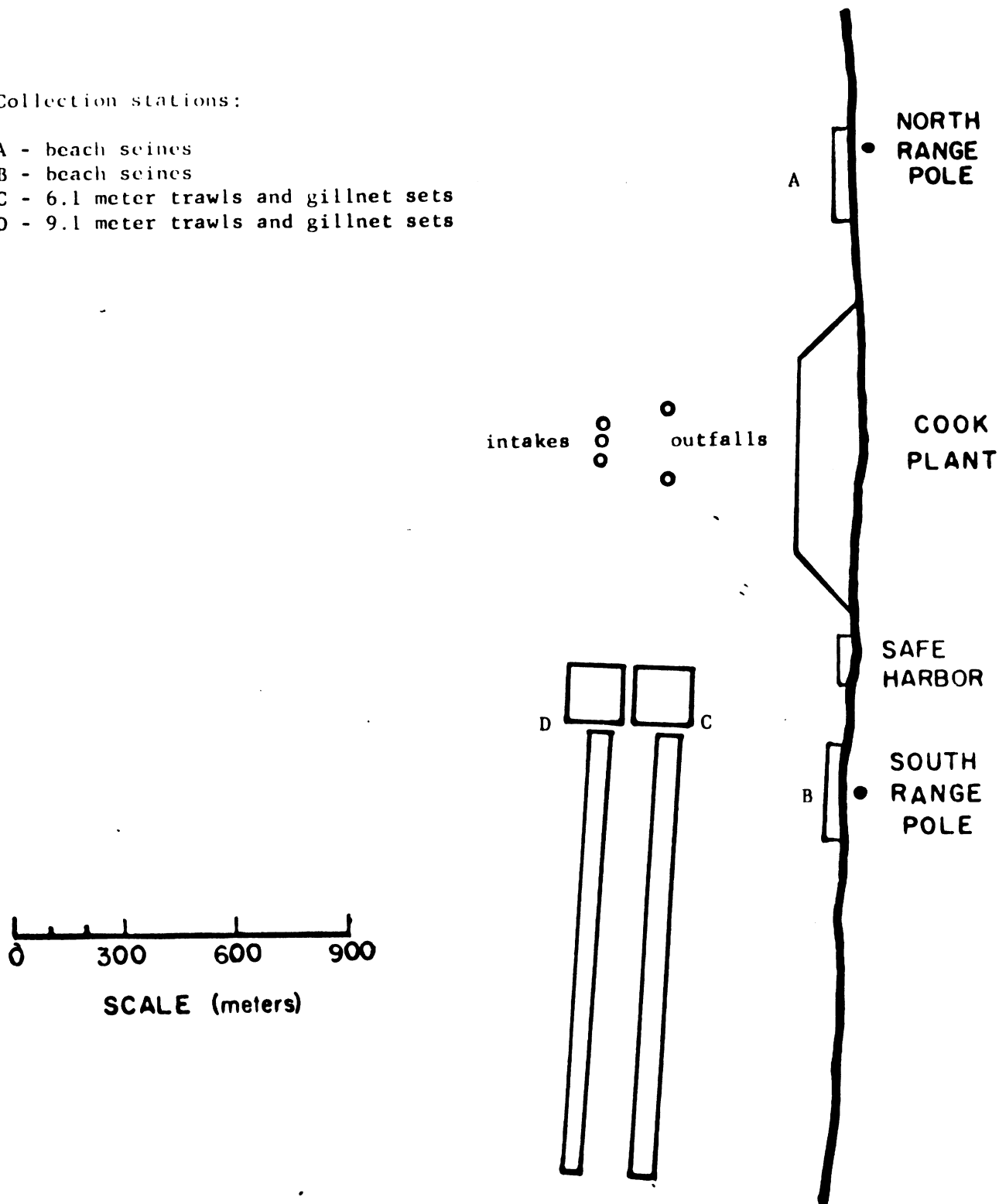


FIG. 1. Map of the study area showing locations of the Cook Plant, intake and discharge structures, and seining (A,B), gillnetting and trawling (C,D) stations, May to November 1972.

during a day and a night once each month at stations A and B. The seine was pulled in a northerly direction at station A and in a southerly direction at station B. In October and November the 4.9 m (16 ft) Boston Whaler outboard was attached to the deep-water end of the seine and a 4-wheel drive vehicle to the shallow-water end. The seine was pulled considerably faster with this method than earlier hauls by hand.

Trawling

Replicate bottom tows of 10 minutes each were taken during both the day and night (except May and June) at station C and D using a semi-ballon nylon trawl having a 4.9 m (16 ft) headrope and a 5.8 (19 ft) footrope. The body of the net is composed of 3.8 cm (1.5 in) stretch mesh, the cod end of 2.3 cm (1.25 in) stretch mesh and the inner liner of 1.3 cm (0.5 in) stretch mesh. All trawls were made using the R/V MYSSIS, except during May when the tug JAMES EDWARD was used. Average speed of the tows was about 3 mph.

Gillnetting

During May, June, and November nylon gillnets of various lengths with bar mesh size of 6.4 and 7.6 cm (2.5 and 3 in) were set at stations C and D. In July an 82.4 x 1.8 m (270 x 6 ft) nylon gillnet of 6.4 cm (2.5 in) bar mesh was set at station D while a 144.9 x 1.8 m (475 x 6 ft) experimental gillnet was set at station C. This net was composed of 11 panels of netting as follows: three 7.6 m (25 ft) sections of the following bar mesh sizes - 1.3 cm (0.5 in), 1.9 cm (0.75 in) and 2.5 cm (1.0 in); and, eight 15.3 m (50 ft) sections of bar mesh sizes starting at 3.1 cm (1.25 in) and increasing in increments of 0.65 cm (0.25 in)

up to 7.6 cm (3.0 in) size mesh. All gillnet sets from August to October, and all but two in November, were conducted using the experimental gillnet.

Nets were set perpendicular to the shoreline from 3.5 to 7 hours for day sets, while night sets were placed parallel to the shore for times ranging from 7 to 21 hours. Longer sets occurred when sudden storms prevented net retrieval. Replicate gillnet sets were made during both the day and night in July and August, but only during the day in September. One set per day and night at each station was made during all other months.

Fish Larvae and Egg Studies

A one-half meter diameter plankton net of no. 5 mesh (280 μ aperture) was used to collect fish larvae at the two trawling stations (C and D, Fig. 1). Samples were collected once per month during the day from May to November, excluding July and August. At each station triplicate 5 minute (in May they were 2.5 minutes) horizontal tows were obtained in a stepwise manner proceeding in 1 meter increments from 2 meters to the surface. The net was towed for about 1.6 minutes at each 1 meter interval. Towing was done parallel to shore in alternating directions. The R/V MYSSIS traveling at a speed of 2-4 knots was used to collect all samples. Samples were preserved with 10% formalin and counted with the aid of a large magnifying-glass lamp and dissecting scope. Larval fish were identified using Fish (1929) and reference specimens collected in the Palisades plant area near South Haven. These reference specimens were identified Wells (Bureau of Sport Fisheries and Wildlife, Ann Arbor).

Fish egg data were obtained from benthos counting personnel who made no special attempt to find fish eggs in all samples. Bottom fauna samples were collected in the area using a ponar dredge. Faunal samples were then passed through a 0.5 mm mesh screen.

Fish

In this report the terms egg, larvae, fry, juvenile, and adult have been used. The term larvae refers to that stage in development starting after hatching from the egg through the post-larval stage to where the larvae resembles a young fish. Fry were arbitrarily defined as any fish less than 2.5 cm long and not a larvae. Juveniles arbitrarily refer to fish greater than 2.5 cm and not yet adult, while the term adult refers to all mature fish larger than juveniles, which are capable of or have spawned.

Fry and juvenile fish were identified using Hubbs and Lagler (1964) with common and scientific names assigned according to the American Fisheries Society, Special Publication No. 6, 1970. Representative specimens of all species caught have been retained for reference and comparison. Juvenile and adult fish were counted, while fry numbers were visually estimated.

Subsampling was used when too many fish were caught to weigh and measure individually. This was accomplished using two different procedures. In both methods every tenth fish was sampled and the rest were discarded. In the first case fish were separated into arbitrary size classes, while in the second case they were not.

Fish less than 35 cm were preserved in 10% formalin while larger

fish were preserved in 12.5%. A longitudinal slit was made into the right, ventral side of the coelomic cavity of all fish greater than about 15 cm. After 5 to 28 days large specimens were stored permanently in 10% buffered formalin, while smaller ones were stored in 7% solution. After being in formalin from 2 to 8 weeks fish were measured to the nearest highest 0.5 cm. Problems with shrinkage and deformation were apparent, particularly for large specimens. All fish were weighed individually except some of the spottail shiners, alewives, trout-perch, and smelt, which were processed differently. The latter were divided into arbitrary size groups and counted. Next the shortest and largest individual were weighed and measured individually. A total weight of each of the size groups was then obtained from which an average weight was calculated. When the latter method was used, average length is the mean of the maximum and minimum lengths, while average weight was obtained by dividing the total weight of the group by the number in it. Fish 0 to 20 g were weighed on a triple beam balance to the nearest 0.1 g, those 20 to 70 g were weighed to the nearest 5 g using a sliding scale with a hook, while larger fish (or groups of fish) were weighed to the nearest 10 g using a dial scale with a hook or scoop. Scales were cleaned and calibrated approximately once per month.

Information on clipping as well as lamprey scars was also collected when observed.

Statistical and Computational Procedures

Seine haul catches are reported as mean catch per 61 m of shore and trawling catches are reported as the mean catch per 10 minute trawl.

Standard errors were calculated for all means, but only included on the graphs when their value exceeded 5% of the maximum value of the graph scale. On graphs, one standard error is displayed as a vertical line running perpendicularly through either one or both sides of the mean.

Please note that in Figures 2 through 11, the bars indicate numbers of juveniles when they are stippled and numbers of adults when they are not. For both of these designations, numbers of juveniles start from zero and extend upward to the top of the stippled area, and numbers of adults depicted start from zero and extend upward to the top of the open area. The stippled and open areas in any given bar do not mean percent composition of the total.

Among gillnets, catch-per-effort data are presented only for the experimental gillnet catches. Numbers caught and lengths and weights of fish captured in the non-experimental nets are shown in all other tables where gillnet data are reported. For gillnets which were set for different lengths of time during the day and night, numbers caught were adjusted to a catch-per-12 hour basis for day and for night catches. For the longer night sets numbers were included unadjusted.

Larval tow catches are reported as total number of larvae found in three 10 minute tows. Since each 10 minute tow was obtained at a speed of 2.3 to 4.6 mph, approximately 242 to 487 m³ of water was filtered through the net assuming 100% net efficiency.

RESULTS

Adult Fish

As of February 16, 1973, thirty-six species of fish have been captured in the Cook Plant area or taken from the trash basket after pumping operations (Table 1). These fish represent 19 families of fishes, with many warm water forms represented. This list is probably biased somewhat toward the inclusion of inshore species, as most sampling was done in 9.1 m of water or less.

To evaluate the effect of water temperature, wind, waves, and weather on catch data, tables were constructed presenting such data for gillnets (Table 2), for seines (Table 3), for trawls (Table 4), and for larval tows (Table 5). It should be noted that most fishing operations are weather dependent, so that a bias toward fishing during fair weather occurred.

The overall composition of the catch when numbers of fish captured by all types of gear (seine, gillnet, and trawl) were combined, revealed that five species made up over 98% of all fish captured (Table 6). Those five species in order of highest abundance were spottail shiner, alewife, rainbow smelt, yellow perch, and trout-perch. The next eight species, Johnny darter, white sucker, longnose sucker, lake trout, chinook salmon, rainbow trout, emerald shiner, and longnose dace made up the next 1.7% of total catch, while 16 species comprised the remaining 0.3%.

To indicate gear selectivity and the diel activity of the various species of fish, total numbers caught (and percent of the total for each species) were broken down by gear type and by day and night (Table 7).

fish were captured during the night. For the spottails and alewives, it appeared that approximately equal numbers were taken during the day and night.

The numbers of less-commonly captured species (Table 8) gives insight into where many of these species may be found. For example, rainbow trout were only captured during seining operations, and in equal numbers both during the day and night. Lake trout were captured with all three types of gear, whereas bloaters were only taken by trawl. Longnose dace and emerald shiners were captured only in the beach seining operations, and most longnose suckers were taken with gillnets. Most sculpins were taken by trawl.

The minimum and maximum length as well as mean weight for samples of the 13 most commonly-caught species are presented in one large continuous table (Table 9). The order of presentation of species is the same as found in Table 6, with the order for gear types being gillnet, trawl, and seine. The length and weight of the less abundantly captured species of fish are found in Table 10. Gear type and the stations at which these fish were taken are also given.

Fry

The numbers of spottail shiner, alewife, and smelt fry (Table 11) indicated that August and September were the months of maximum abundance of fry in the shallow water areas around Cook Plant. Numbers of spottail and smelt fry declined to zero in October and November, while considerable numbers of alewife were still present in October.

Larval Fish

The numbers of larval fish found in 10-minute tows at stations C and D

(Table 12) were low. The largest numbers were collected in June, with virtually none being found in May, September, and November. Unfortunately inadequate samples were taken during July and August, the months of maximum abundance of larval fish.

Fish Eggs

Fish eggs found in benthos samples were measured using an ocular micrometer in a binocular scope and found to range from 0.90 to 1.00 mm in outside diameter. These egg diameters were then compared with egg diameters from eight other common species in the area and only eggs from yellow perch were found to be the same size. These eggs were less abundant in water shallower than 9.1 m (N = 19, mean = 21/ponar, S. E. = 5) than in water from 9.1 to 24.2 m deep (N = 13, mean = 126/ponar, S. E. = 19).

Strings of egg masses found on trawls June 11, 1972, were found to contain fish larvae at the yolk sac stage, which from the appearance and abundance of gravid perch in the area were tentatively identified as yellow perch larvae.

Table 1. Common and scientific names of all species of fish captured in the vicinity of the Cook Plant as of February 16, 1973. Fish were taken with netting gear unless otherwise noted.

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
Acipenseridae	
<i>Acipenser fulvescens</i>	lake sturgeon
Catastomidae	
<i>Catostomus catostomus</i>	longnose sucker
<i>Catostomus commersoni</i>	white sucker
<i>Carpionodes cyprinus</i>	quillback
Centrarchidae	
<i>Micropterus dolomieu</i> ^b	smallmouth bass
<i>Lepomis gibbosus</i> ^b	pumpkinseed
<i>Lepomis cyanellus</i>	green sunfish
<i>Pomoxis nigromaculatus</i> ^b	black crappie
Clupeidae	
<i>Alosa pseudoharengus</i>	alewife
<i>Dorosoma cepedianum</i>	gizzard shad
Cottidae	
<i>Cottus bairdi</i>	mottled sculpin
<i>Cottus cognatus</i>	slimy sculpin
Cyprinidae	
<i>Cyprinus carpio</i>	carp
<i>Notropis hudsonius</i>	spottail shiner
<i>Notropis atherinoides</i>	emerald shiner
<i>Rhinichthys cataractae</i>	longnose dace
<i>Couesius plumbeus</i>	lake chub
Esocidae	
<i>Esox lucius</i>	northern pike
Gadidae	
<i>Lota lota</i> ^{ab}	burbot

Table 1, cont'd.

Gasterosteidae

<i>Pungitius pungitius</i>	nine-spine stickleback
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Ictaluridae

<i>Ictalurus melas</i> ^{ab}	black bullhead
<i>Ictalurus punctatus</i>	channel catfish

Osmeridae

<i>Osmerus mordax</i>	rainbow smelt
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Percidae

<i>Perca flavescens</i>	yellow perch
<i>Etheostoma nigrum</i>	Johnny darter
<i>Stizostedion vitreum vitreum</i> ^a	walleye

Percopsidae

<i>Percopsis omiscomaycus</i>	trout perch
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Salmonidae

<i>Salmo gairdneri</i> ^c	rainbow trout
<i>Salmo trutta</i>	brown trout
<i>Salvelinus namaycush</i>	lake trout
<i>Oncorhynchus kisutch</i>	coho salmon
<i>Oncorhynchus tshawytscha</i>	chinook salmon
<i>Coregonus clupeaformis</i> ^a	lake whitefish
<i>Coregonus hoyi</i>	bloater
<i>Coregonus artedii</i>	lake herring (cisco)

Umbridae

<i>Umbra limi</i> ^b	central mud minnow
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^aFrom a gillnet set in 21.2 m (70 ft) of water. No data on length and weight of fishes was recorded.

^bObtained from the 1.5 cm (3/8 in) mesh basket which receives entrained fish and debris from the traveling screens.

^cTwo phenotypes present.

Table 2. Date and length of time experimental gillnets were used, as well as some physical and limnological parameters measured at the time of fish collection.

Starting Date	Starting Time	Hours Fished	Station	Temperature (C)		Fishing Depth	Wind		Waves		Weather
				Surface	Fishing		Dir.	From	Speed (mph)	Dir.	
5-25-72 ^a	1340	4.1	C	11.3	9.0		N	5.8-11.5	N	0.2	Clear
5-25-72 ^a	1800	14.8	C	8.0	7.0		N	0.0-5.8	N	0.2	Clear
6-11-72 ^{ab}	1900	19.0	C&D	14.2	13.5		SW	11.5	SW	0.3	Clear
6-13-72 ^{ab}	0915	6.5	C&D	16.2	15.7		SW	0.0-5.8	--	calm	Clear
6-13-72 ^{ab}	1915	14.0	D	17.1	15.1		SW	0.0-5.8	--	calm	Clear
7-14-72 ^b	1130	3.5	D	23.0	20.9		--	--	--	calm	Haze
7-14-72 ^b	1130	3.5	C	23.0	21.5		--	--	--	calm	Haze
7-14-72 ^b	1600	4.5	D	23.0	20.9		SW	11.5-23.0	SW	0.9-1.2	Storm building
7-14-72	1600	4.5	C	23.0	21.5		SW	11.5-23.0	SW	0.9-1.2	Storm building
7-15-72 ^b	1230	3.5	D	22.0	20.7		WSW	5.8-11.5	SW	0.2	Clear
7-15-72	1230	3.5	C	22.2	21.9		WSW	5.8-11.5	SW	0.2	Clear
7-17-72	2100	13.0	C	22.5	22.0		SE	15.0	S	0.6-0.8	Overcast
7-17-72 ^b	2050	13.0	D	22.5	23.0		SE	15.0	S	0.6-0.8	Overcast
7-18-72	2045	12.8	C	22.0	21.0		--	0.0	--	calm	Partly cloudy
7-18-72	2100	12.5	D	22.0	21.0		--	0.0	--	calm	Partly cloudy
8-10-72	0930	7.0	D	17.2	16.2		--	--	SW	0.2	Overcast
8-10-72	0930	7.0	C	17.0	16.0		--	--	SW	0.2	Overcast
8-10-72	2015	11.8	C	18.1	16.5		SE	5.0-10.0	E	0.1	Clear
8-10-72	2030	12.0	D	18.0	16.0		SE	5.0-10.0	E	0.1	Clear
8-12-72	0830	5.0	C	17.8	17.8		S	1.0-3.0	--	calm	Partly cloudy

Table 2, cont'd.

Starting Date	Starting Time	Hours Fished	Station	Temperature (C)		Wind		Waves		Weather
				Surface	Fishing Depth	Dir.	From Speed (mph)	Dir.	From Ht(m)	
8-12-72	0840	5.0	D	16.0	15.8	S	1.0-3.0	--	calm	Partly cloudy
8-12-72	2000	15.2	C	18.0	17.5	NNW	5.0	NW	calm	Clear
8-12-72	2015	14.8	D	19.8	17.0	NNW	6.9	NW	calm	Clear
9-08-72	1130	4.5	D	18.8	18.8	NW	10.0-15.0	NW	0.6-1.2	Overcast
9-08-72	1130	4.5	C	19.2	18.6	NW	10.0-15.0	NW	0.6-1.2	Overcast
9-10-72	1050	5.0	C	16.5	15.0	SE	10.0-15.0	SE	0.6	Partly cloudy
9-10-72	1105	5.0	D	17.2	15.2	SE	10.0-15.0	SE	0.6	Partly cloudy
9-10-72	1800	16.0	C	16.8	17.0	SE	0.0-5.0	SE	0.2	Overcast
9-10-72	1800	16.0	D	17.8	16.5	SE	0.0-5.0	SE	0.2	Overcast
10-04-72	1330	21.0	C	15.5	--	SW	0.0-5.0	--	calm	Overcast
10-04-72	1345	21.0	D	15.5	--	SW	0.0-5.0	--	calm	Overcast
10-06-72	0800	5.0	C	13.5	13.2	SE	0.0-3.0	--	calm	Overcast
10-06-72	0815	4.8	D	13.6	13.0	SE	0.0-3.0	--	calm	Overcast
11-01-72 ^a	1330	5.0	C	10.0	--	E	0.0-5.0	NW	0.3	Overcast
11-01-72	1330	5.0	C	9.9	9.9	SW	23.0	SW	0.9-1.5	Overcast w/rain
11-01-72	1330	5.0	D	10.8	10.8	SW	23.0	SW	0.9-1.5	Overcast w/rain
11-01-72 ^a	1830	10.0	C	9.9	9.9	SW	23.0	SW	0.9-1.5	Overcast w/rain

^a 45.6 m (150 ft) long x 1.8 m (6 ft) deep x 7.6 cm (bar measure) mesh nylon gillnet^b 82.3 m (270 ft) long x 1.8 m (6 ft) deep x 6.4 cm (bar measure) mesh nylon gillnet

Table 3. Date and time seines were used, as well as some physical and limnological parameters measured at the time of fish collection.

Starting Date	Starting Time	Hours Fished	Station	Temperature (C)		Wind		Waves		Weather
				Surface	Fishing Depth	Dir.	From Speed (mph)	Dir.	From Ht (m)	
6-28-72	2030	*	A	17.0	--	NW	11.5-0.0	NW	0.2	Overcast w/ rain
6-28-72	2200	*	B	17.0	--	NW	11.5-0.0	NW	0.2	Overcast w/ rain
7-13-72	2100	*	A	22.5	22.5	--	--	--	calm	Overcast
7-14-72	1300	*	A	25.0	23.0	SW	5.8-11.5	SW	0.2	Hazy
7-15-72	1355	*	B	24.0	23.4	W	5.8-11.5	W	0.3	Partly Cloudy
7-18-72	2130	*	B	21.9	21.8	--	--	--	calm	Overcast
8-06-72	2040	*	A	18.0	18.0	--	--	--	calm	Storm building
8-06-72	2125	*	B	16.0	15.8	SW	0.0-5.0	SW	0.2	Storm building
8-10-72	0940	*	A	17.0	16.5	--	--	SW	0.2	Overcast
8-10-72	1059	*	B	17.0	16.5	--	--	SW	0.2	Overcast
8-12-72	2030	*	A	19.9	19.5	NW	3.0	--	calm	Hazy
8-12-72	2135	*	B	18.5	18.3	NW	3.0	--	calm	Fog
8-13-72	1535	*	A	22.0	20.0	NW	3.0	NW	calm	Clear
8-13-72	1625	*	B	25.0	21.0	NW	3.0	NW	calm	Clear
9-07-72	2053	*	A	19.0	19.0	N	5.8-11.5	W	0.2	Foggy
9-07-72	2200	*	B	19.2	19.2	N	5.8-11.5	W	0.2	Foggy
9-10-72	1423	*	A	17.8	17.0	SE	0.0-5.0	SW	0.2-0.3	Overcast
9-10-72	1510	*	B	18.2	17.6	SE	0.0-5.0	SW	0.2	Overcast
10-05-72	1602	*	A	15.5-16.2	15.0-16.2	SE	0.0-2.0	--	calm	Overcast
10-05-72	1650	*	B	15.5-16.5	15.0-16.0	SE	0.0-2.0	--	calm	Partly Cloudy
11-01-72	1500	*	A	10.6	10.3	NE	5.0-10.0	NW	0.2-0.3	Overcast
11-01-72	1645	*	B	--	--	E	0.0-5.0	NW	0.3	Overcast

*Seines were pulled for 61 m (200 ft) unless noted differently elsewhere

Table 4. Date and length of time trawling gear was used, as well as some physical and limnological parameters measured at the time of fish collection.

Starting Date	Starting Time	Hours Fished	Station	Temperature (C)		Wind		Waves		Weather	
				Surface	Fishing Depth	Dir.	From	Speed (mph)	Dir.		From
5-24-72	1430	*	C	10.9-11.5	9.0-9.5	NNE		5.8-11.5	NNE	0.2-0.3	Clear-Partly cloudy
5-25-72	Day	*	C	12.9	9.8	N		0.0-5.8	NW	0.2	Clear
6-11-72	1606	*	C	15.0	--	--		--	--	calm	Clear
6-11-72	1710	*	D	15.0	14.0	--		--	--	calm	Clear
7-17-72	1327	*	C	22.5	21.0	S		18.0	S	0.6	Overcast
7-17-72	1415	*	D	21.5	20.0	S		15.0-18.0	S	0.6	Overcast
7-18-72	2050	*	C	21.1	20.9	--		0.0	--	calm	Cloudy
7-18-72	2137	*	D	22.0	19.0	--		0.0	--	calm	Cloudy
8-11-72	2106	*	C	17.0	16.8	S		4.0	SW	0.3-0.6	Partly cloudy
8-12-72	1409	*	C	20.0	17.5	S		1.0	SW	0.3	Partly cloudy
8-12-72	1451	*	D	20.0	17.5	S		1.0-5.0	SW	0.3	Partly cloudy
9-09-72	1400	*	D	17.8-19.2	17.8-18.6	N		15.0-20.0	N	0.6-1.2	Clear
9-09-72	1430	*	C	18.0	17.8	N		15.0-20.0	N	0.6-1.2	Clear
10-19-72	1320	*	D	11.9	11.3	NW		0.0-5.0	NW	0.6-0.9	Overcast
10-19-72	1440	*	C	11.0	10.8	NW		0.0-5.0	NW	0.6-0.9	Overcast
11-01-72	2037	*	D	10.8	10.8	E		20.7	E	0.2	Overcast
11-01-72	2123	*	C	9.9	9.9	E		20.7	E	0.2	Overcast
11-02-72	0922	*	D	11.0	10.5	SW		20.0	SW	0.9	Overcast
11-02-72	1008	*	C	11.0	11.0	SW		23.0	SW	0.9-1.5	Clear

*All trawls were for 10 minutes

Table 5. Date and length of time larval tows were made, as well as some physical and limnological parameters measured at the time of fish collection.

Starting Date	Starting Time	Hours Fished	Station	Temperature (C)		Fishing Depth	Wind		Waves		Weather	
				Surface			Dir.	From	Speed (mph)	Dir.		From
5-24-72	1200	*	C	11.6	10.9		NE		5.8	--	0.0	Clear
5-25-72	1640	*	C	12.0	11.5		NW		0.0-5.8	NW	0.2	Clear
6-13-72	--	*	C	16.0	16.0		S		9.2	S	0.1	Partly Cloudy
6-13-72	--	*	D	16.3	15.4		S		0.0-5.8	S	0.1	Partly Cloudy
9-10-72	0945	*	C	17.8	--		SE		11.5-17.3	SE	0.6	Overcast
9-10-72	1010	*	D	18.1	--		SE		11.5-17.3	SE	0.6	Overcast
10-19-72	1100	*	C	11.9	--		N		0.0-5.8	NW	0.6-0.9	Overcast
10-19-72	1100	*	D	11.0	--		N		0.0-5.8	NW	0.6-0.9	Overcast
11-02-72	1051	*	C	11.0	--		SW		23.0	SW	0.9	Overcast
11-02-72	1051	*	D	11.0	--		SW		23.0	SW	0.9	Overcast

*All tows were for 5 minutes except May which was 2.5 minutes

Table 6. Monthly and total counts resulting from pooling numbers of fish captured by seine, trawl and gillnet during May to November, 1972. Data represent combined adults and juveniles for each species. Percentage composition of the catch is also given. (*t* means less than 0.1%)

	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	TOTAL	% OF GRAND TOTAL
Spottail shiner	0	459	2713	4373	381	1714	594	10,234	39.9
Alewife	93	1079	1041	1103	1342	512	3215	8,385	32.7
Smelt	117	765	3	15	58	499	821	2,278	8.9
Yellow perch	0	212	844	389	511	113	74	2,143	8.4
Trout-perch	0	236	388	470	271	682	32	2,079	8.1
Johnny darter	1	73	0	14	23	26	16	153	0.6
White sucker	1	2	6	49	12	13	16	99	0.4
Longnose sucker	3	1	3	21	4	1	16	49	0.2
Lake trout	0	19	0	1	1	2	14	37	0.1
Chinook salmon	0	22	8	1	1	3	0	35	0.1
Rainbow trout	0	0	4	9	1	3	9	26	0.1
Emerald shiner	0	0	0	3	13	1	0	17	0.1
Longnose dace	0	1	4	8	2	0	0	15	0.1
Carp	0	0	0	5	2	4	0	11	<i>t</i>
Lake herring	0	0	1	4	0	3	2	10	<i>t</i>
Mottled sculpin	1	3	0	0	3	2	0	9	<i>t</i>
Coho salmon	0	6	0	0	1	1	1	9	<i>t</i>
Bloater	0	5	2	0	0	0	0	7	<i>t</i>
Brown trout	1	0	0	4	0	0	2	7	<i>t</i>
Ninespine stickleback	0	4	0	0	0	0	0	4	<i>t</i>

Continued on following page

Table 6, cont'd.

	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	TOTAL	% OF GRAND TOTAL
Slimy sculpin	0	0	0	0	0	1	3	4	t
Channel catfish	0	0	0	0	1	1	1	3	t
Lake chub	0	0	0	0	2	0	0	2	t
Quillback	0	0	1	0	0	0	0	1	t
Lake sturgeon	0	0	1	0	0	0	0	1	t
Smallmouth bass	0	1	0	0	0	0	0	1	t
Northern pike	0	0	0	0	0	1	0	1	t
Green sunfish	0	0	0	0	0	1	0	1	t
Gizzard shad	0	0	0	0	0	0	1	1	t
FRY*	0	0	0	11,000	19,100	10- 14,000	0	40- 44,000	

* Approximate numbers as follows (not included in percentages):

August - composed of 40% alewife, 30% spottails, 30% smelt
 September - composed of 95% alewife, 3% smelt, 2% spottails
 October - composed of 100% alewife

Table 7. The number of each species caught during the day and night by each of the types of fishing gear. The percent of the total for each individual species is given in parenthesis. Fish were captured from May to November, 1972.

	SEINE				TRAWL				GILLNET			
	No.	%	Day	Night	No.	%	Day	Night	No.	%	Day	Night
Spottail shiner	3260	(31.9)	3441	(33.6)	746	(7.3)	1470	(14.4)	204	(2.0)	1113	(10.9)
Alewife	906	(10.8)	423	(5.0)	4993	(59.6)	271	(3.2)	218	(2.6)	1574	(18.8)
Smelt	0	(0.0)	39	(1.7)	1676	(73.6)	430	(18.9)	11	(0.5)	122	(5.4)
Yellow perch	38	(1.8)	166	(7.7)	189	(8.8)	133	(6.2)	726	(33.9)	890	(41.5)
Trout-perch	1	(0.1)	360	(17.3)	745	(35.8)	947	(45.6)	1	(0.1)	25	(1.2)
Johnny darter	4	(2.6)	22	(14.4)	74	(48.4)	53	(34.6)	0	(0.0)	0	(0.0)
White sucker	1	(1.0)	9	(9.1)	2	(2.0)	1	(1.0)	23	(23.2)	63	(63.6)
Longnose sucker	0	(0.0)	2	(4.1)	0	(0.0)	3	(6.1)	8	(16.3)	36	(73.5)
Lake trout	0	(0.0)	15	(40.5)	2	(5.4)	0	(0.0)	0	(0.0)	20	(54.1)
Chinook salmon	0	(0.0)	30	(85.7)	0	(0.0)	0	(0.0)	1	(2.9)	4	(11.4)
Rainbow trout	16	(61.5)	10	(38.5)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Emerald shiner	4	(23.5)	13	(76.5)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Longnose dace	4	(26.7)	11	(73.3)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Carp	0	(0.0)	1	(9.1)	1	(9.1)	1	(9.1)	0	(0.0)	8	(72.7)
Lake herring	5	(50.0)	0	(0.0)	2	(20.0)	2	(20.0)	0	(0.0)	1	(10.0)
Mottled sculpin	0	(0.0)	1	(11.1)	4	(44.4)	4	(44.4)	0	(0.0)	0	(0.0)
Coho salmon	1	(11.1)	6	(66.7)	0	(0.0)	0	(0.0)	0	(0.0)	2	(22.2)
Bloater	0	(0.0)	0	(0.0)	5	(71.4)	2	(28.6)	0	(0.0)	0	(0.0)
Brown trout	1	(14.3)	0	(0.0)	0	(0.0)	0	(0.0)	1	(14.3)	5	(71.4)
Ninespine stickleback	0	(0.0)	0	(0.0)	4	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)

Table 7, cont'd.

	SEINE				TRAWL				GILLNET			
	Day		Night		Day		Night		Day		Night	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Slimy sculpin	0	(0.0)	0	(0.0)	0	(0.0)	4	(100.0)	0	(0.0)	0	(0.0)
Channel cat	0	(0.0)	0	(0.0)	0	(0.0)	1	(33.3)	0	(0.0)	2	(66.6)
Lake chub	0	(0.0)	0	(0.0)	2	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)
Quillback	0	(0.0)	1	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Lake sturgeon	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	1	(100.0)
Smallmouth bass	0	(0.0)	1	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Northern pike	1	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Green sunfish	1	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Gizzard shad	0	(0.0)	1	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)

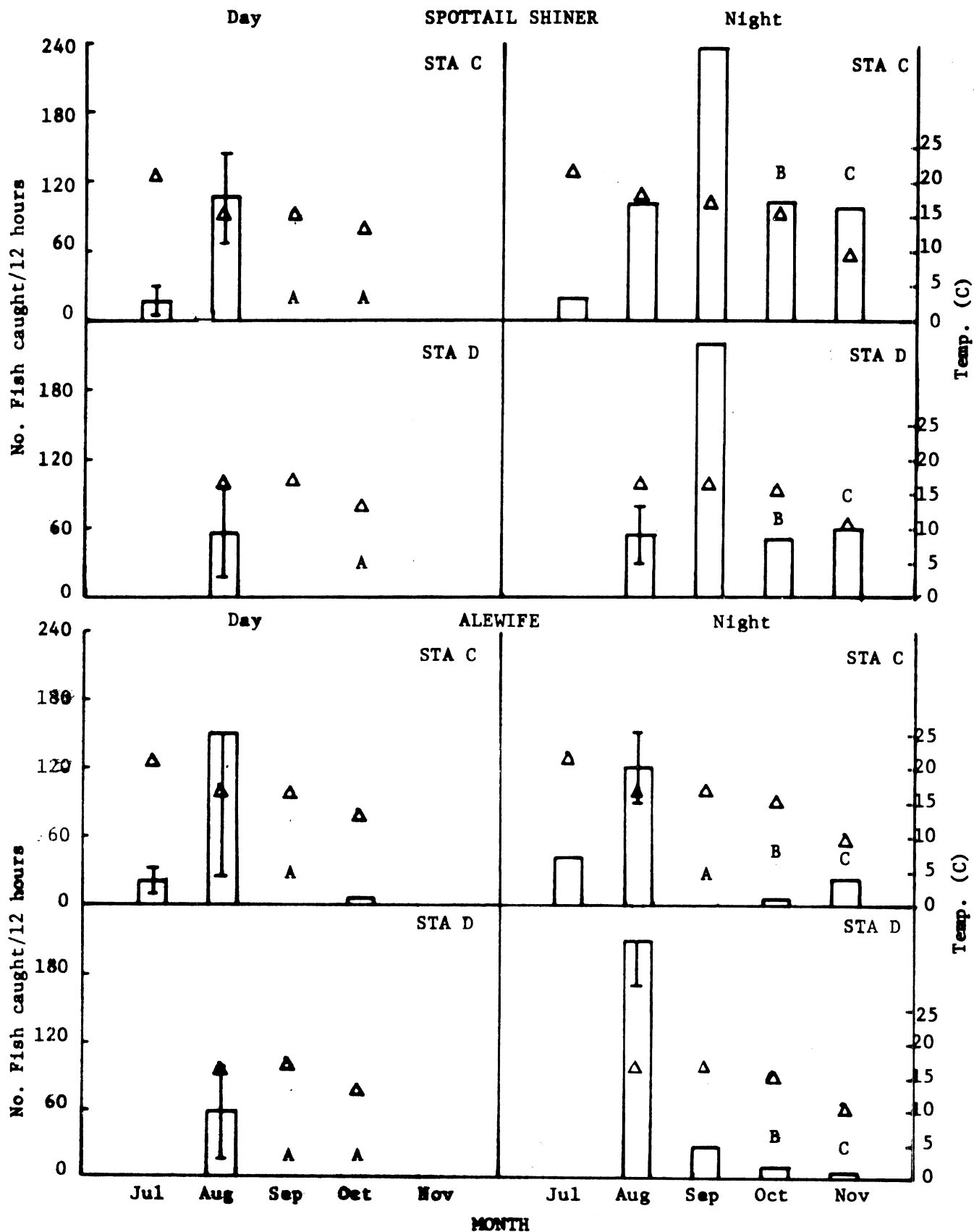


FIG. 2. No. of spottail shiners and alewives caught (bars) in gillnets in 1973. A = 0 fish caught; B = 21 hr set; C = 19 hr set; triangles indicate temperature.

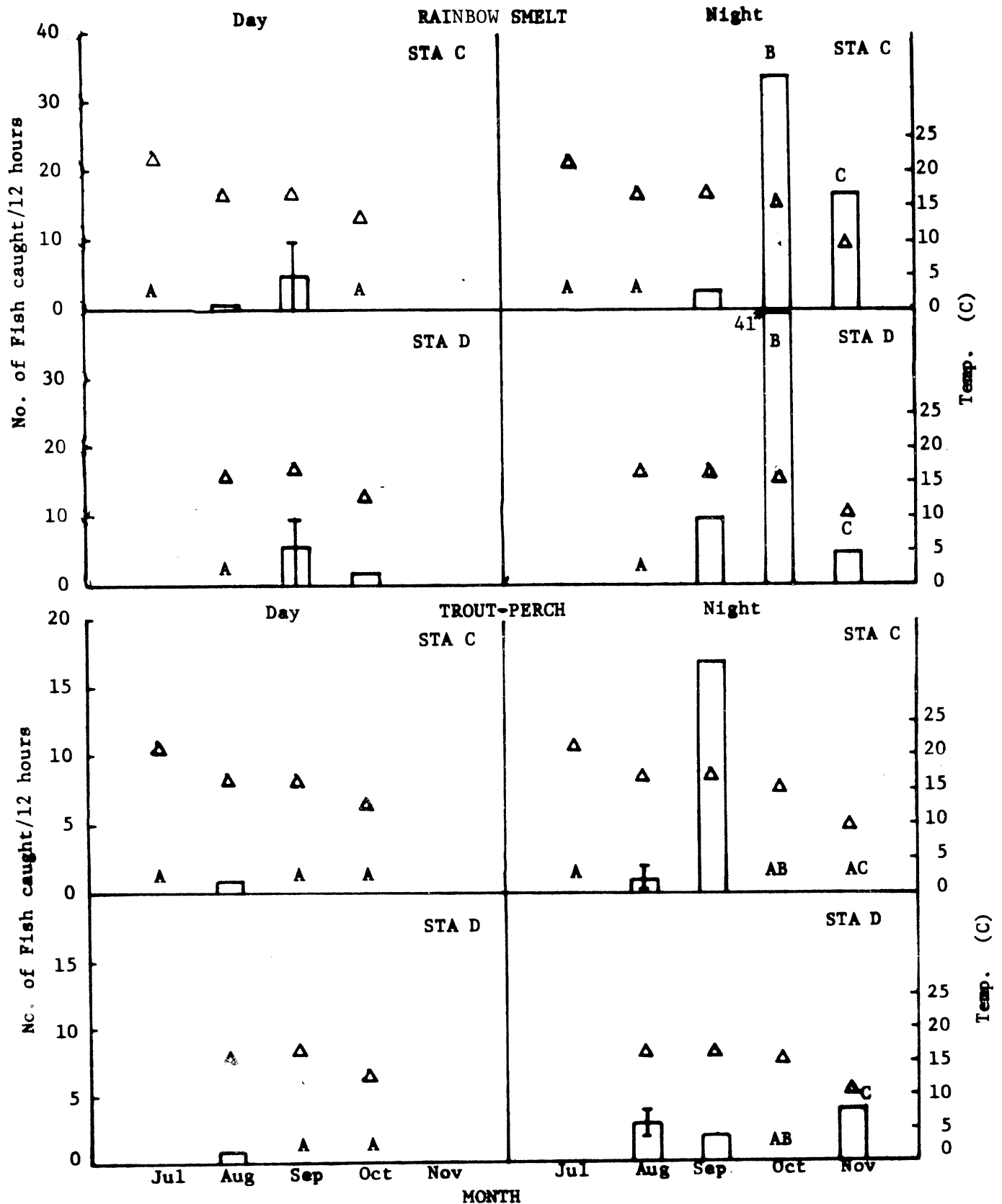


FIG. 3. No. of smelt and trout-perch caught (bars) in gillnets in 1973. A = 0 fish caught; B = 21 hr set; C = 19 hr set; triangles indicate temperature.

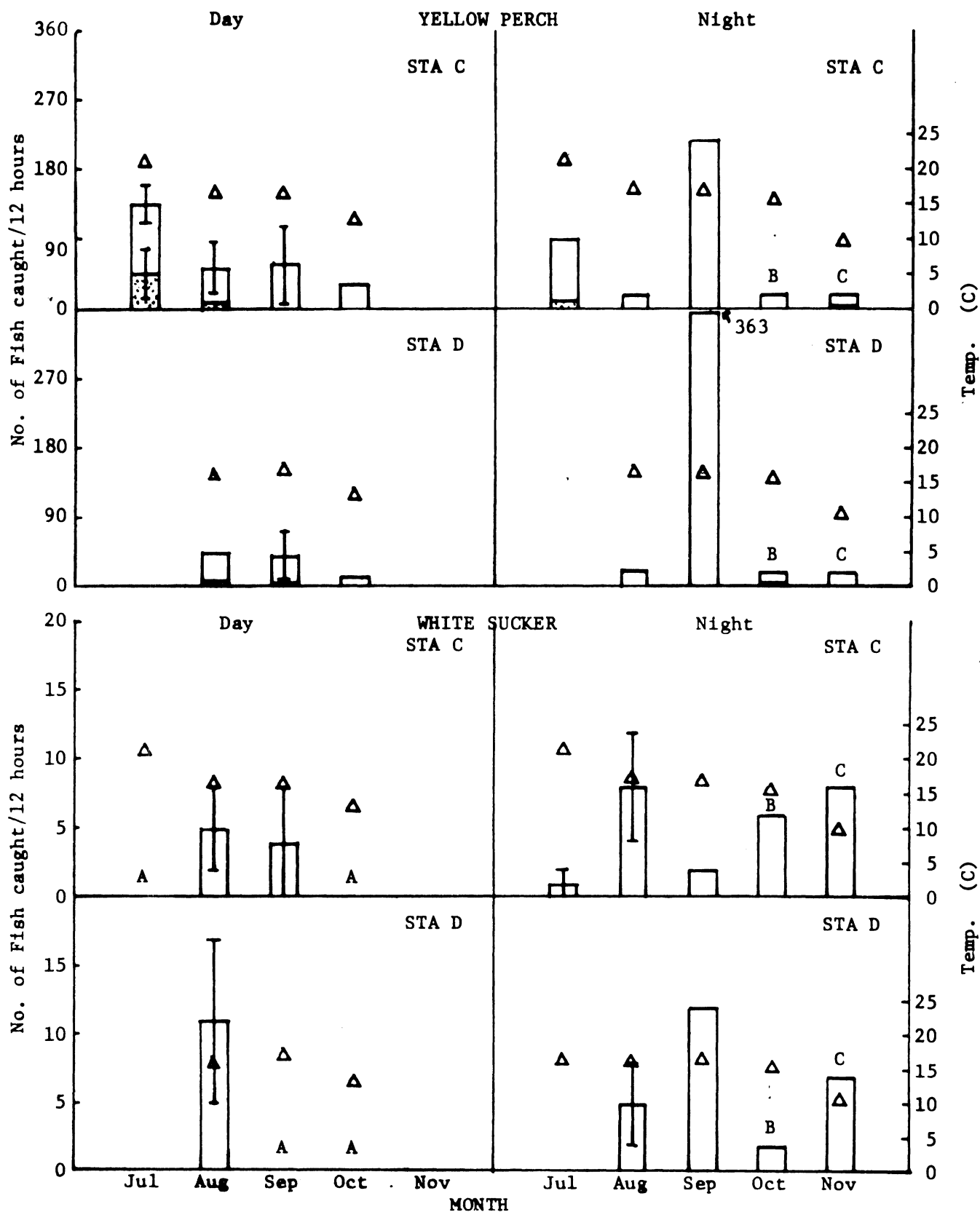


FIG. 4. No. of yellow perch and white sucker caught (bars) in gillnets in 1973. A = 0 fish caught; B = 21 hr set; C = 19 hr set; triangles indicate temperature. Stipled area indicates no. of juveniles; open area indicates adults.

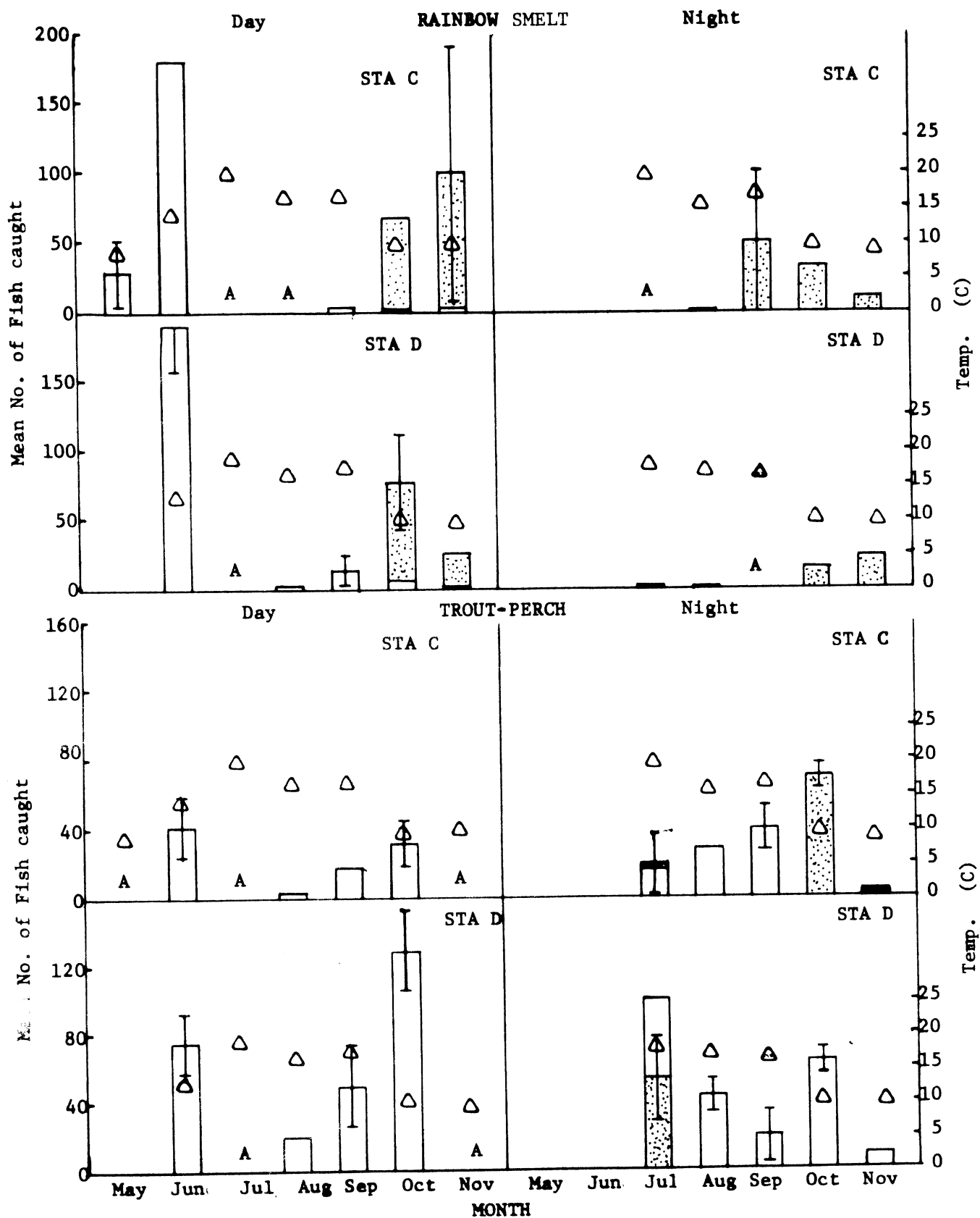


FIG. 5. No. of smelt and trout-perch caught (bars) in trawls in 1973. A = 0 fish caught; B = 21 hr set; C = 19 hr set; triangles indicate temp. Stipled area indicates no. of juveniles; open area indicates adults.

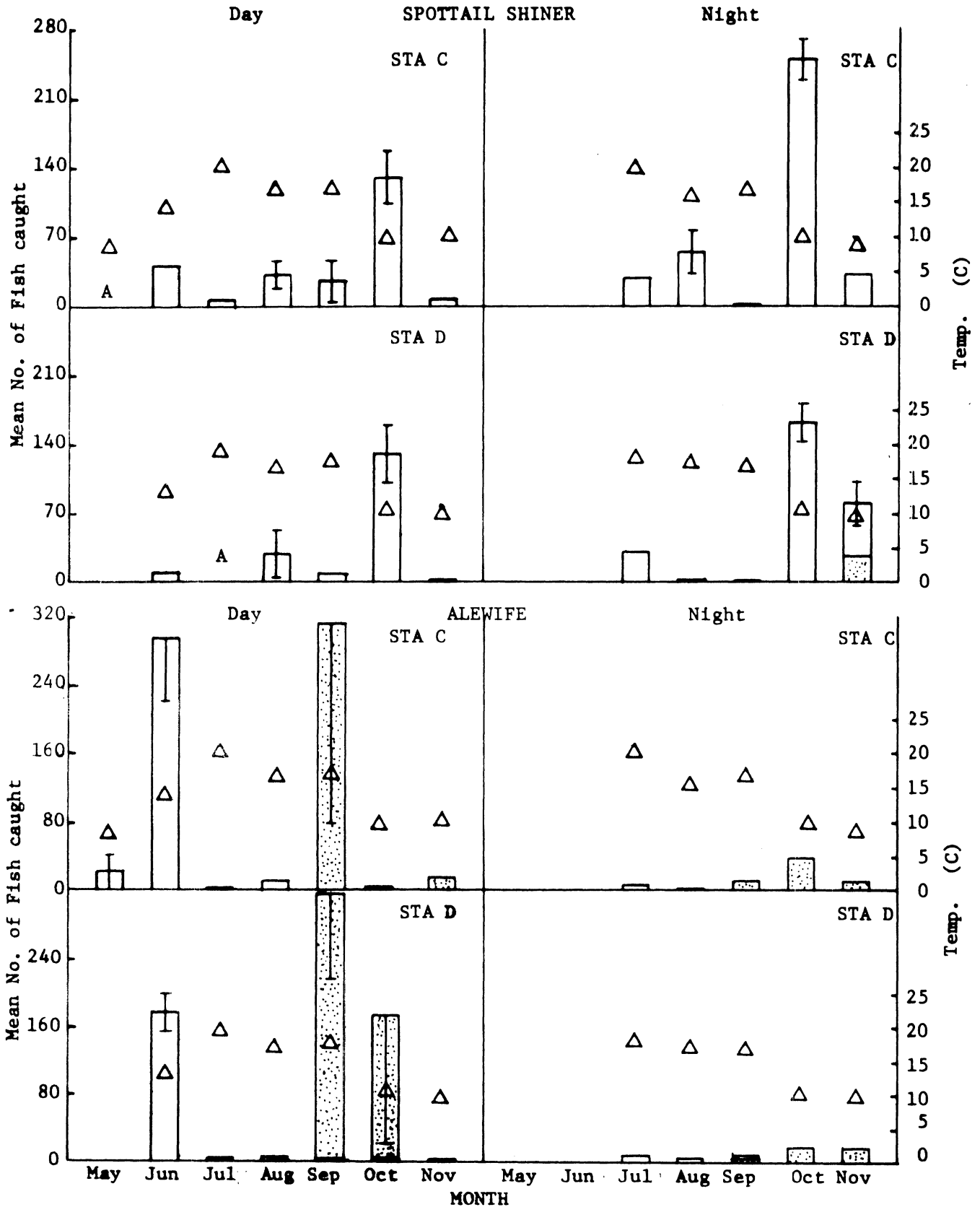


FIG. 6. No. of spottail shiners and alewives caught in trawls in 1973.
 A = 0 fish caught; B = 21 hr set; C = 19 hr set; triangles indicate temp.
 Stipled area indicates no. of juveniles; open area indicates adults.

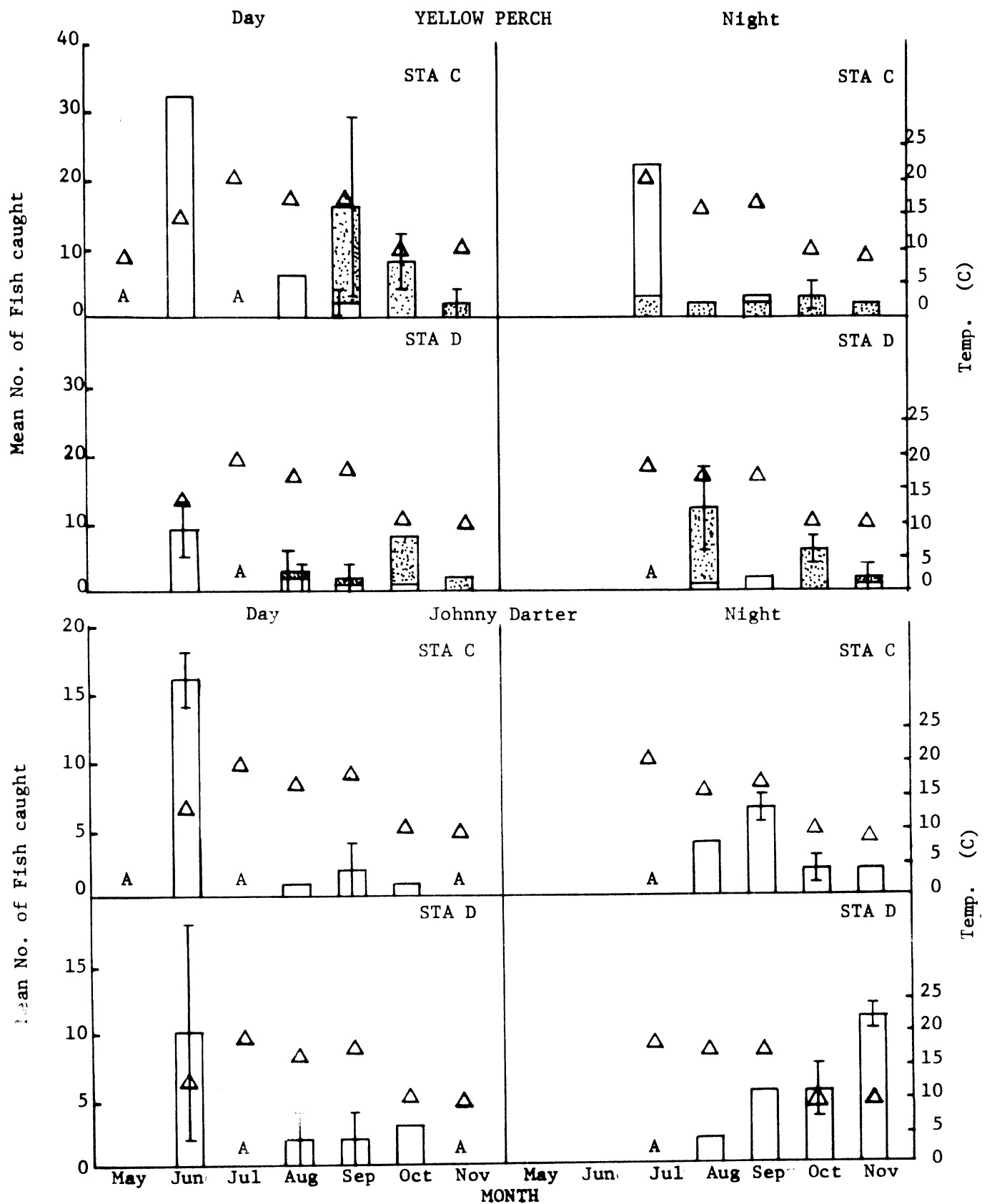


FIG. 7. No. of yellow perch and Johnny darters caught in trawls in 1973. A = 0 fish caught; B = 21 hr set; C = 19 hr set; triangles indicate temp. Stipled area indicates no. of juveniles; open area indicates adults.

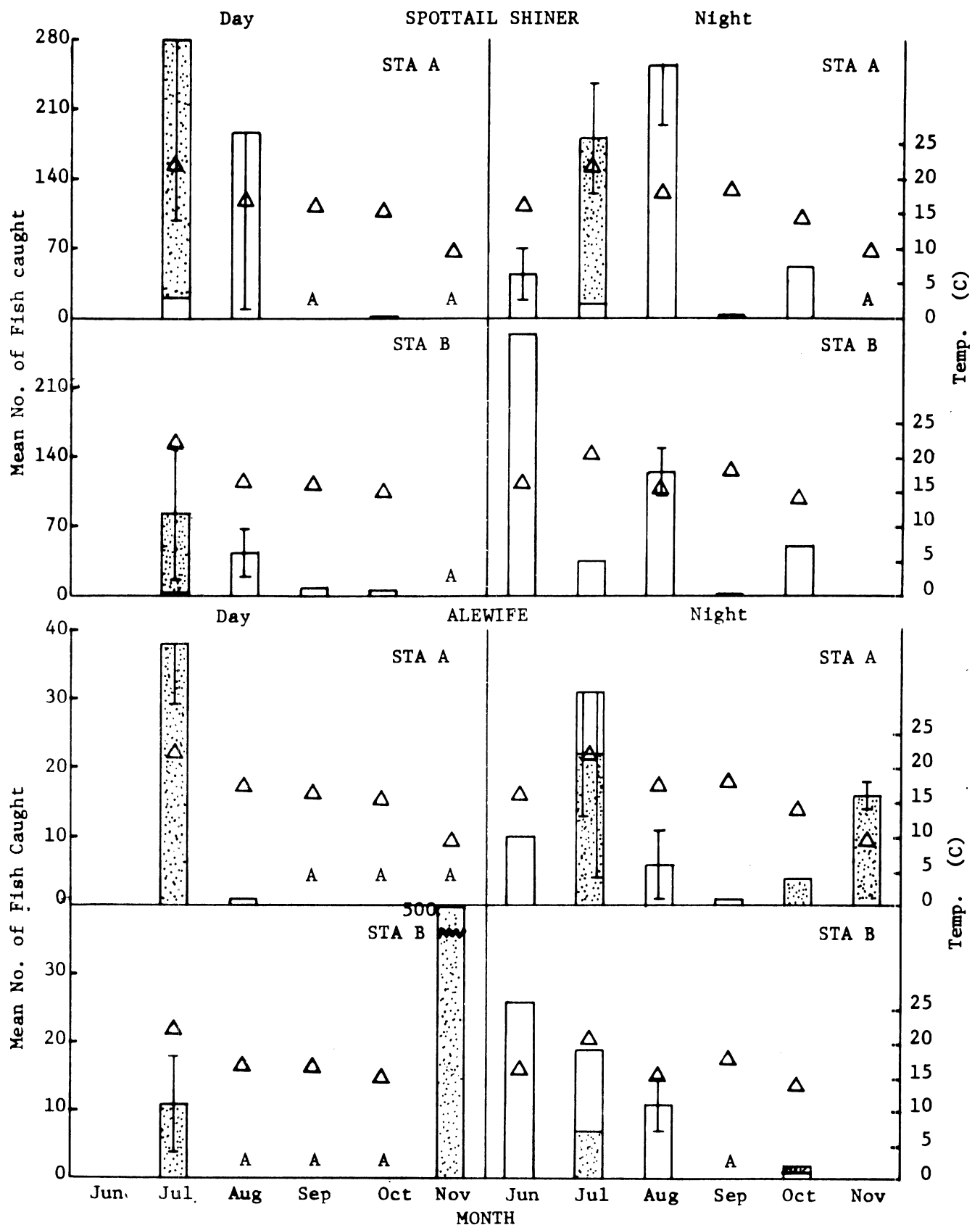


FIG. 8. No. of spottail shiners and alewives caught in seines in 1973. A = 0 fish caught; B = 21 hr set; C = 19 hr set; triangles indicate temp. Stopped area indicates no. of juveniles; open area indicates adults.

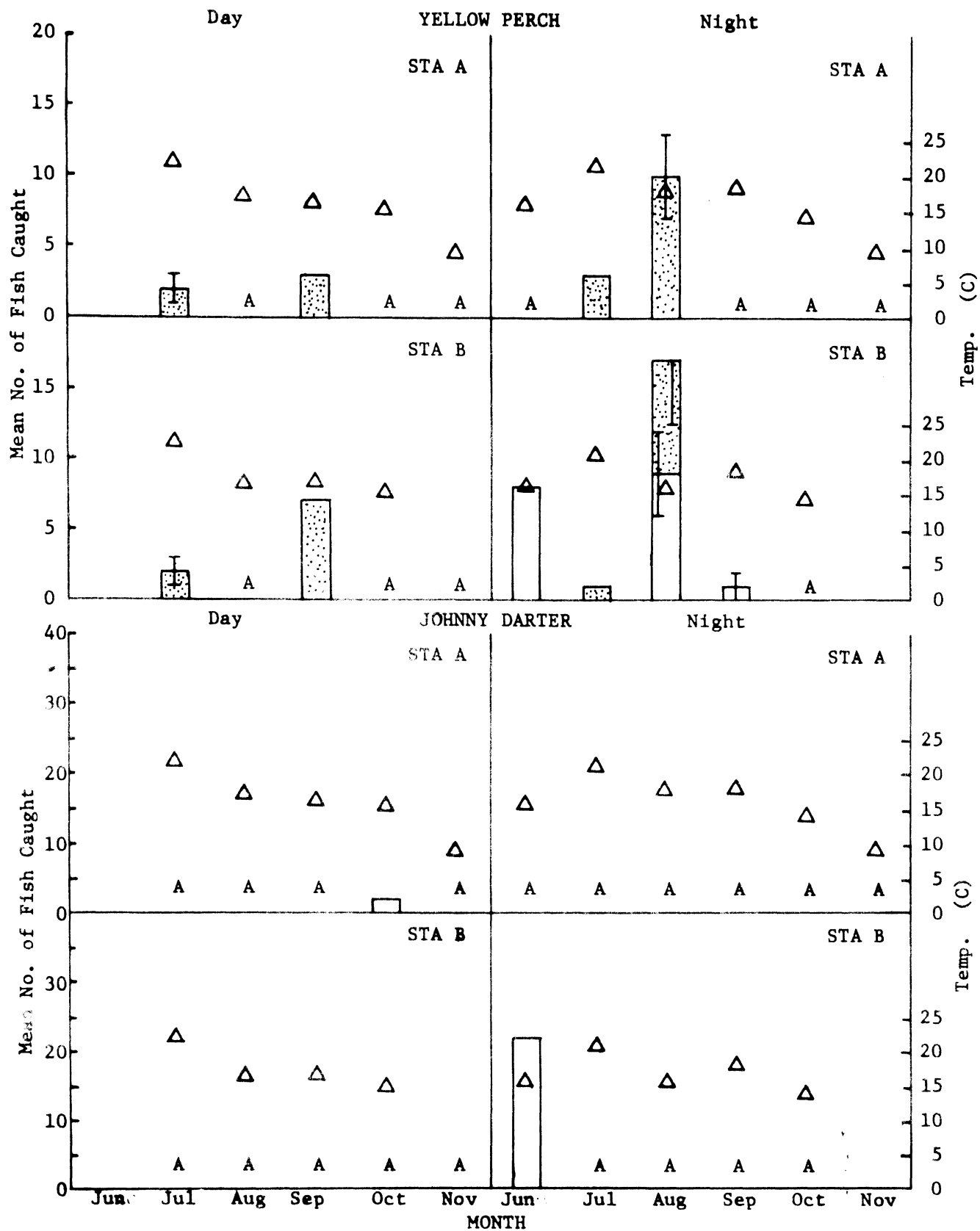


FIG. 9. No. of yellow perch and Johnny darters caught in seines in 1973. A = 0 fish caught; B = 21 hr set; C = 19 hr set; triangles indicate temp. Stipled area indicates no. of juveniles; open area indicates adults.

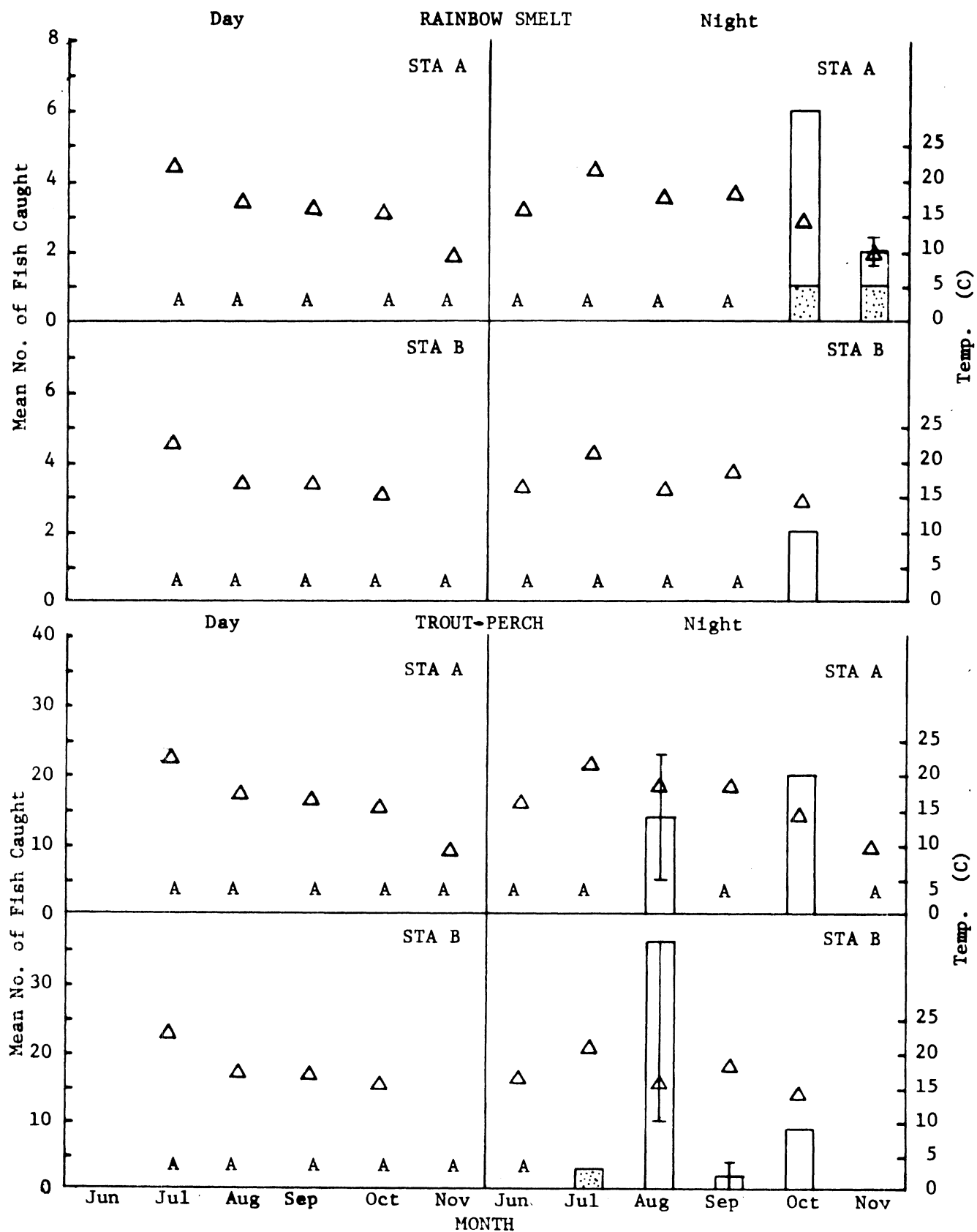


FIG. 10. No. of smelt and trout-perch caught in seines in 1973. A = 0 fish caught; B = 21 hr set; C = 19 hr set; triangles indicate temperature. Stipled area indicates no. of juveniles; open area indicates adults.

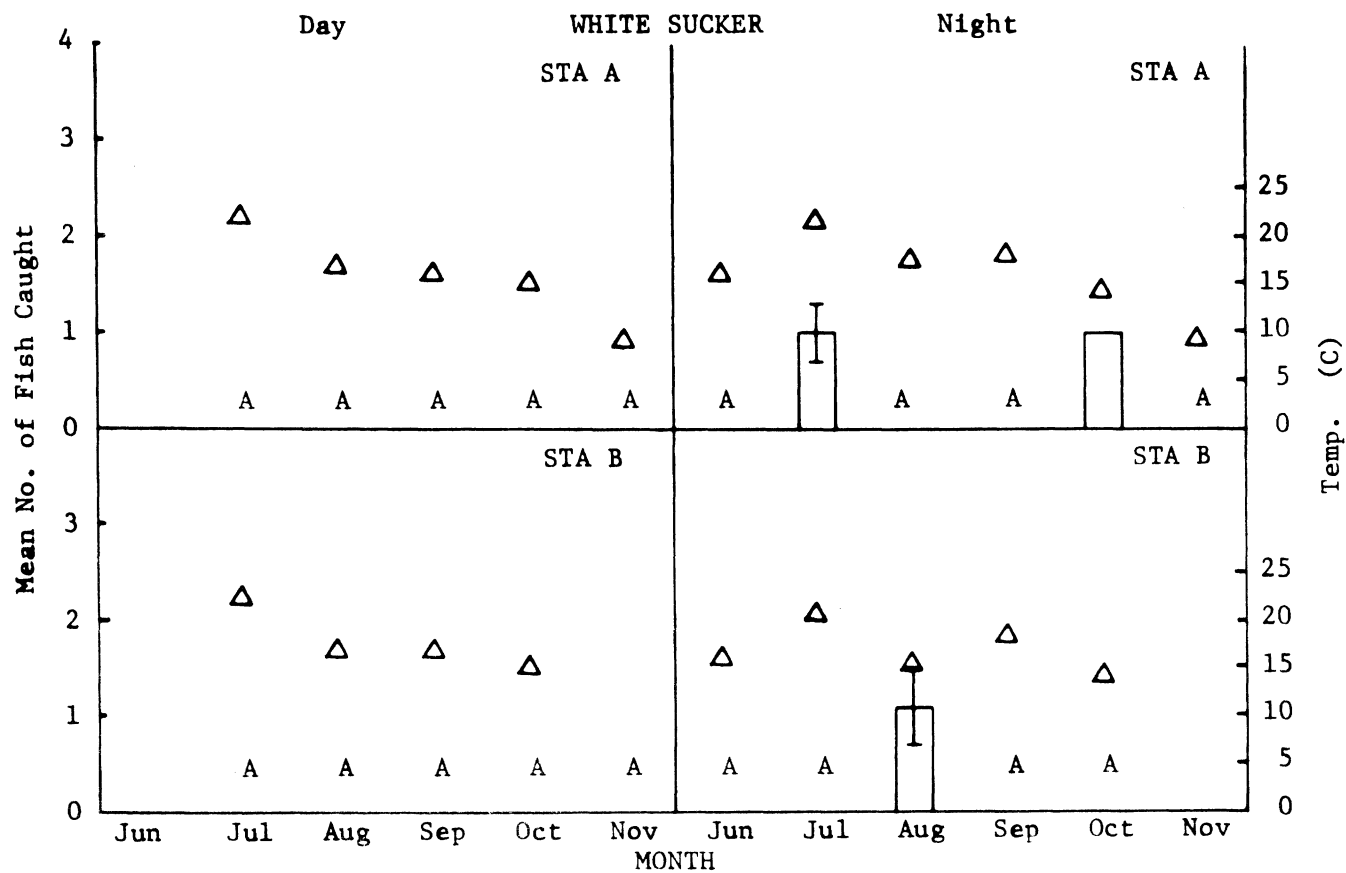


FIG. 11. No. of white suckers caught in seines in 1973. A = 0 fish caught; B = 21 hr set; C = 19 hr set; triangles indicate temperature.

Table 8. A tabulation of the numbers of some less-commonly captured species of fish in the vicinity of the Donald C. Cook nuclear power plant. Location, method, time of capture and water temperature are given. (J means juvenile.)

<u>Species</u>	<u>Sta.</u>	<u>Date</u>	<u>Time</u>	<u>Temp. (C)</u>	<u>Collect. Method</u>	<u>Total Hrs. Fish.</u>	<u>No. Caught</u>
Lake Trout	D	11 Jun	Day	14.0	Trawl	-	1
	C	11 Jun	Day	15.0	Trawl	-	1
	A	28 Jun	Night	17.0*	Seine	-	1
	A	28 Jun	Night	17.0	Seine	-	8
	B	28 Jun	Night	17.0	Seine	-	5
	D	10 Aug	Night	16.0	Gillnet	12	1
	C	10 Sep	Night	17.0	Gillnet	7	J1
	D	4 Oct	**	15.5	Gillnet	21	2
	A	1 Nov	Night	10.3	Seine	-	1
	C	1 Nov	**	9.9	Gillnet	24	12
	D	1 Nov	**	10.8	Gillnet	24	1
Rainbow Trout	A	13 Jul	Night	22.5	Seine	-	J2
	A	13 Jul	Night	22.5	Seine	-	J1
	A	14 Jul	Day	23.0	Seine	-	J1
	A	10 Aug	Day	16.5	Seine	-	J2
	A	10 Aug	Day	16.5	Seine	-	3,*** J1
	A	12 Aug	Night	19.5	Seine	-	J1
	A	12 Aug	Night	19.5	Seine	-	J3
	B	12 Aug	Night	18.3	Seine	-	J1
	A	10 Sep	Day	17.0	Seine	-	J1
	A	5 Oct	Day	16.2	Seine	-	J1
	A	5 Oct	Night	15.0	Seine	-	J1
	A	1 Nov	Day	10.2	Seine	-	J2
	A	1 Nov	Day	10.2	Seine	-	6, J3
	A	1 Nov	Night	10.3	Seine	-	J1

* Surface Temperature

** 19-21 hour set

*** includes one adult Steelhead

Table 8, cont'd.

<u>Species</u>	<u>Sta.</u>	<u>Date</u>	<u>Time</u>	<u>Temp.</u> <u>(C)</u>	<u>Collect.</u> <u>Method</u>	<u>Total</u> <u>Hrs.</u> <u>Fish.</u>	<u>No.</u> <u>Caught</u>
Lake Herring	A	10 Aug	Day	16.5	Seine	-	J1
	B	10 Aug	Day	16.5	Seine	-	J1
	A	13 Aug	Day	20.0	Seine	-	J2
	A	5 Oct	Day	16.2	Seine	-	J1
	D	19 Oct	Day	11.3	Trawl	-	2
	C	1 Nov	Night	9.9	Trawl	-	J1
	C	2 Nov	Day	11.0	Trawl	-	J1
Bloater	D	11 Jun	Day	14.0	Trawl	-	1
	C	11 Jun	Day	15.0*	Trawl	-	1
	C	11 Jun	Day	15.0*	Trawl	-	3
	D	18 Jul	Night	19.0	Trawl	-	J1
	D	18 Jul	Night	19.0	Trawl	-	J1
Gizzard Shad	A	1 Nov	Night	10.3	Seine	-	1
Longnose Dace	A	13 Jul	Night	22.5	Seine	-	1
	B	15 Jul	Day	23.4	Seine	-	2
	B	18 Jul	Night	21.8	Seine	-	1
	A	10 Aug	Day	16.5	Seine	-	2
	A	12 Aug	Night	19.5	Seine	-	4
	B	12 Aug	Night	18.3	Seine	-	1
	A	7 Sep	Night	19.0	Seine	-	1
	A	7 Sep	Night	19.0	Seine	-	1
Merald Shiner	A	13 Aug	Day	20.0	Seine	-	3
	A	7 Sep	Night	18.2	Seine	-	12
	B	7 Sep	Night	19.2	Seine	-	1
	A	Oct	Day	16.2	Seine	-	1
	B	5 Oct	Day	16.0	Seine	-	1

Table 8, cont'd.

<u>Species</u>	<u>Sta.</u>	<u>Date</u>	<u>Time</u>	<u>Temp. (C)</u>	<u>Collect. Method</u>	<u>Total Hrs. Fish.</u>	<u>No. Caught</u>
Brown Trout	A	10 Aug	Day	16.5	Seine	-	J1
	D	10 Aug	Night	16.0	Gillnet	12	1
	D	12 Aug	Night	17.0	Gillnet	14.75	2
	C	1 Nov	**	9.9	Gillnet	24	2
Chinook Salmon	A	28 Jun	Night	17.0*	Seine	-	15
	A	28 Jun	Night	17.0*	Seine	-	7
	A	13 Jul	Night	22.5	Seine	-	J1
	A	13 Jul	Night	22.5	Seine	-	J4
	A	13 Jul	Night	22.5	Seine	-	J3
	D	13 Aug	Night	17.0	Gillnet	14.75	J1
	D	5 Oct	Night	15.5	Gillnet	21	J2
	C	6 Oct	Day	13.2	Gillnet	5	J1
Coho Salmon	A	28 Jun	Night	17.0*	Seine	-	1
	A	28 Jun	Night	17.0*	Seine	-	3
	B	28 Jun	Night	17.0*	Seine	-	3
	B	5 Oct	Day	16.0	Seine	-	J1
	D	1 Nov	**	9.9	Gillnet	24	J1
Longnose Sucker	A	13 Jul	Night	22.5	Seine	-	2
	D	18 Jul	Night	19.0	Trawl	-	1
	D	10 Aug	Day	16.2	Gillnet	7	3
	C	10 Aug	Day	16.0	Gillnet	7	2
	C	10 Aug	Night	16.5	Gillnet	11.75	3
	D	10 Aug	Night	16.0	Gillnet	12	4
	C	12 Aug	Night	17.5	Gillnet	15.25	1
	D	12 Aug	Night	17.0	Gillnet	14.75	6
	D	12 Aug	Night	18.0	Trawl	-	1

Table 8, cont'd.

<u>Species</u>	<u>Sta.</u>	<u>Date</u>	<u>Time</u>	<u>Temp.</u> <u>(C)</u>	<u>Collect.</u> <u>Method</u>	<u>Total</u> <u>Hrs.</u> <u>Fish.</u>	<u>No.</u> <u>Caught</u>
Longnose Sucker (cont'd.)	C	10 Sep	Night	17.0	Gillnet	7	4
	C	4 Oct	Night	15.5*	Gillnet	21	2
	C	1 Nov	**	9.9	Gillnet	24	1
	C	1 Nov	**	10.8	Gillnet	24	15
Carp	D	10 Aug	Night	16.0	Gillnet	12	1
	C	11 Aug	Night	16.8	Trawl	-	1
	C	12 Aug	Day	17.5	Trawl	-	1
	C	12 Aug	Night	17.5	Gillnet	15.25	2
	D	10 Sep	Night	16.5	Gillnet	7	2
	D	4 Oct	Night	15.5	Gillnet	21	1
	A	5 Oct	Night	15.0	Seine	-	1
	D	4 Oct	**	15.5*	Gillnet	21	2
Quillback	A	13 Jul	Night	22.5	Seine	-	1
Slimy Sculpin	D	19 Oct	Day	11.3	Trawl	-	1
	D	19 Oct	Night	11.1	Trawl	-	1
Mottled Sculpin	C	25 May	Day	9.8	Trawl	-	1
	D	11 Jun	Day	14.0	Trawl	-	1
	C	11 Jun	Day	15.0*	Trawl	-	1
	A	28 Jun	Night	17.0*	Seine	-	1
	C	9 Sep	Night	17.8	Trawl	-	2
	C	9 Sep	Night	17.8	Trawl	-	1
	D	19 Oct	Night	11.1	Trawl	-	1
	D	19 Oct	Night	11.1	Trawl	-	1
	D	1 Nov	Night	10.8	Trawl	-	3

Table 8, cont'd.

<u>Species</u>	<u>Sta.</u>	<u>Date</u>	<u>Time</u>	<u>Temp.</u> <u>(C)</u>	<u>Collect.</u> <u>Method</u>	<u>Total</u> <u>Hrs.</u> <u>Fish.</u>	<u>No.</u> <u>Caught</u>
Lake Chub	C	9 Sep	Day	17.8	Trawl	-	2
Channel Catfish	C	10 Sep	Night	17.0	Gillnet	7	1
	D	4 Oct	**	15.5*	Gillnet	21	1
	C	1 Nov	Night	9.9	Trawl	-	1
Ninespine Stickleback	D	11 Jun	Day	14.0	Trawl	-	1
	C	11 Jun	Day	15.0*	Trawl	-	2
Lake Sturgeon	C	18 Jul	Night	21.0	Gillnet	12.25	1
Northern Pike	A	5 Oct	Day	16.2	Seine	-	1
Smallmouth Bass	A	28 Jun	Night	17.0*	Seine	-	1
Green Sunfish	B	5 Oct	Day	16.0	Seine	-	1

Table 9. A compilation of lengths, weights and catch statistics for fish captured in the vicinity of the Donald C. Cook Nuclear Power Plant during 1972. (Depth is in meters.)

Species: Spottail shiner Collecting method: Gillnet Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
14 Jul 1130 - 1500	2/2	2	11.0	13.0	12.0	10.0
14 Jul 1600 - 2030	17/17	17	11.0	14.0	12.5	18.8
17-18 Jul 2100 - 1000	26/258	26	11.5	13.0	12.2	19.2
18-19 Jul 2045 - 0930	13/130	13	11.5	14.0	12.8	19.2
12 Aug 0830 - 1345	3/32	3	10.0	12.5	11.2	20.0
12-13 Aug 2000 - 1115	26/147	12 14	12.5 9.5	14.5 12.0	13.5 10.8	21.5 18.1
4-5 Oct 1330 - 1030	11/102	4 7	13.0 11.0	13.5 11.5	13.2 11.2	25.0 18.6
1-2 Nov 1330 - 1830	9/98	9	11.5	12.5	12.0	25.0

Table 9, cont'd.

Species: Spottail shiner Collecting method: Gillnet Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
10-11 Aug 2030 - 0830	9/81	9	11.0	14.0	12.5	18.9
12 Aug 0840 - 1330	7/7	7	11.0	12.5	11.8	17.6
12-13 Aug 2015 - 1100	5/38	5	12.0	14.0	13.0	26.0
8 Sep 1130 - 1600	1/1	1	12.5	12.5	12.5	16.0
4-5 Oct 1345 - 1045	5/51	2 3	13.0 11.0	14.0 12.0	13.5 11.5	29.0 16.7
1-2 Nov 1330 - 0830	7/60	1 6	14.0 11.0	14.0 12.5	14.0 11.8	25.0 20.0

Table 9, cont'd.

Species: Spottail shiner Collecting method: Trawl Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
11 Jun 1606 - 1611	34/34	21 13	10.0 5.0	13.5 6.5	11.8 5.8	19.1 1.5
11 Jun 1611 - 1616	49/49	40 9	10.7 5.0	14.6 7.5	12.7 6.2	18.8 1.8
15 Jul 1327 - 1337	14/14	14	10.0	13.0	11.5	16.4
18 Jul 2050 - 2100	28/28	28	8.5	13.5	10.8	15.7
18 Jul 2115 - 2125	27/27	27	10.0	13.0	11.5	15.7
11 Aug 2215 - 2225	8/76	8	14.5	16.5	15.5	25.4
12 Aug 1409 - 1419	6/47	6	7.0	11.0	9.0	8.3
12 Aug 1431 - 1441	18/18	12 6	10.0 6.5	12.0 8.5	11.0 7.5	11.3 6.2
9 Sep 1430 - 1445	5/49	1 4	12.0 8.5	12.0 10.0	12.0 9.2	15.0 7.3
9 Sep 1445 - 1500	3/3	2 1	11.0 6.5	13.5 6.5	12.2 6.5	17.0 3.0
9 Sep 2044 - 2054	2/2	2	12.0	12.5	12.2	17.0
9 Sep 2107 - 2117	1/1	1	12.0	12.0	12.0	19.0
19 Oct 1410 - 1420	10/44	1 2 4 2	14.5 8.5 4.5 3.0	14.5 8.5 4.5 3.0	14.5 8.5 4.5 3.0	30.0 5.5 1.0 0.5

Table 9, cont'd.

Species: Spottail shiner Collecting method: Trawl Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
19 Oct	15/154	2	11.5	13.5	12.5	20.0
1431 -		1	10.0	10.0	10.0	10.0
1441		2	6.5	8.0	7.2	4.0
		8	4.0	5.0	4.5	1.0
		1	3.0	3.0	3.0	0.5
19 Oct	22/229	2	13.0	13.0	13.0	20.0
1903 -		4	10.0	12.0	11.0	15.0
1913		5	8.0	9.0	8.5	7.0
		9	4.0	5.5	4.8	1.7
		2	3.0	3.5	3.2	0.5
19 Oct	27/269	4	12.5	14.5	13.5	25.3
1924 -		6	9.5	11.5	10.5	13.3
1934		3	7.5	8.5	8.0	4.7
		10	5.0	5.5	5.2	1.4
		4	3.0	4.0	3.5	0.8
1 Nov	8/83	3	13.0	13.0	13.0	25.0
2100 -		5	9.0	11.0	10.0	10.0
2110						
1 Nov	6/52	4	10.5	12.5	11.5	23.8
2123 -		2	5.5	6.5	6.0	2.0
2133						

Table 9, cont'd.

Species: Spottail shiner Collecting method: Trawl Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
11 Jun 1710 - 1715	14/14	10 4	10.0 4.5	13.0 6.0	11.5 5.2	18.4 1.6
11 Jun 1715 - 1720	7/7	4 3	11.5 4.5	13.8 5.5	12.7 5.0	20.1 1.2
17 Jul 1415 - 1425	1/1	1	11.0	11.0	11.0	14.0
18 Jul 2137 - 2147	27/27	27	10.5	13.0	12.8	18.2
18 Jul 2159 - 2209	35/35	35	9.5	12.5	11.0	15.7
12 Aug 1451 - 1501	6/6	6	7.0	11.0	9.0	6.7
12 Aug 1513 - 1523	5/5	1 4	12.0 6.5	12.0 8.0	12.0 7.2	20.0 3.3
12 Aug 2116 - 2126	2/2	2	10.5	11.5	11.0	13.5
12 Aug 2139 - 2149	3/3	3	12.0	13.5	12.8	19.0
9 Sep 1400 - 1415	2/19	1 1	14.0 10.5	14.0 10.5	14.0 10.5	28.0 10.0
9 Sep 2127 - 2137	2/2	2	11.5	11.5	11.5	13.0
19 Oct 1320 - 1330	14/161	2 4 5 2 1	14.0 10.5 7.0 5.0 3.0	14.0 12.0 9.0 6.0 3.0	14.0 11.2 8.0 5.5 3.0	29.0 14.8 5.8 2.0 0.5

Table 9, cont'd.

Species: Spottail shiner Collecting method: Trawl Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
19 Oct 1344 - 1354	10/100	2 5 1 2	12.0 9.0 8.0 5.0	12.0 10.5 8.0 5.5	12.0 9.8 8.0 5.2	15.0 7.0 5.0 1.5
19 Oct 1944 - 1954	19/182	5 12 2	11.0 8.5 3.0	12.5 10.5 4.5	11.8 9.5 3.8	22.0 9.6 0.5
19 Oct 2008 - 2018	14/143	4 4 5 1	12.0 9.5 8.0 5.0	14.0 11.0 9.0 5.0	13.0 10.2 8.5 5.0	27.5 12.5 6.0 1.0
1 Nov 2011 - 2021	10/103	7 2 1	11.0 9.0 8.0	13.0 9.0 8.0	12.0 9.0 8.0	21.4 8.0 5.0
1 Nov 2037 - 2047	5/58	4 1	10.5 8.0	11.5 8.0	11.0 8.0	15.0 5.0
2 Nov 0922 - 0932	1/1	1	4.0	4.0	4.0	0.5
2 Nov 0944 - 0954	1/1	1	11.0	11.0	11.0	14.0

Table 9, cont'd.

Species: Spottail shiner Collecting method: Seine Depth: 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
28 Jun	8/18	2	13.0	13.5	13.2	45.0
2030 -		4	9.0	11.0	10.0	28.8
2050		2	7.0	9.0	8.0	10.0
28 Jun	15/69	5	11.0	13.5	12.2	44.0
2050 -		5	8.5	10.5	9.5	34.0
2110		5	3.5	8.0	5.8	16.0
28 Jun	50/264	10	11.0	14.0	12.5	40.0
2200 -		10	10.0	11.5	10.8	-
2230		10	8.5	12.0	10.2	30.0
		20	4.0	8.5	4.2	13.5
13 Jul	119/119	17	10.5	13.5	12.0	17.7
2100 -		8	8.5	10.0	9.2	12.5
2115		18	7.0	8.0	7.5	5.6
		76	4.5	6.5	5.5	2.0
13 Jul	307/307	17	10.0	13.0	11.5	17.1
2115 -		12	8.5	9.5	9.0	6.7
2120		46	7.0	7.5	7.2	3.7
		232	4.0	6.5	5.2	1.9
13 Jul	143/143	20	11.0	13.5	12.2	20.3
2130 -		6	8.5	10.5	9.5	13.3
2135		24	6.5	8.0	7.8	4.6
		93	4.0	7.0	5.5	1.5
14 Jul	441/441	16	8.5	13.0	10.8	17.5
1320 -		45	7.0	8.5	7.8	4.4
1330		380	4.5	6.5	5.5	1.3
14 Jul	214/214	25	9.5	13.5	11.5	12.4
1330 -		31	7.0	9.5	8.2	5.2
1341		158	4.5	7.0	5.8	2.0
14 Jul	835/835	20	8.5	13.0	10.8	14.5
1347 -		815	4.0	8.5	6.2	2.2
1355						
15 Jul	219/219	5	9.5	11.0	10.2	12.0
1355 -		20	7.5	9.5	8.5	5.5
1405		194	4.5	7.5	6.0	2.1
15 Jul	38/38	7	7.0	7.5	7.2	5.0
1407 -		31	4.5	7.0	5.8	1.8
1412						
15 Jul	36/37	1	10.0	10.0	10.0	10.0
1417 -		35	4.0	7.0	5.5	1.7
1421						

Table 9, cont'd.

Species: Spottail shiner Collecting method: Seine Depth: 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
18 Jul 2130 - 2145	35/35	35	6.5	13.0	9.8	12.0
6 Aug 2050 - 2057	16/165	6 10	10.0 6.5	12.0 8.5	11.0 7.5	15.0 4.0
6 Aug 2102 - 2108	31/314	11 20	8.5 4.5	12.0 8.0	10.2 5.8	11.0 4.0
6 Aug 2125 - 2132	15/152	11 4	10.5 8.0	13.0 8.5	11.8 8.2	15.5 5.0
6 Aug 2140 - 2145	16/163	3 13	15.0 7.5	16.0 9.5	15.5 8.5	26.7 6.2
6 Aug 2145 - 2150	6/62	3 3	8.5 6.0	10.5 8.0	9.5 7.0	10.0 3.3
12 Aug 2030 - 2040	16/168	11 5	9.5 6.0	11.5 8.0	10.5 7.0	13.6 6.0
12 Aug 2050 - 2100	20/190	8 7 5	10.0 6.5 6.0	12.0 8.5 6.5	11.0 7.5 6.2	13.8 5.7 2.0
12 Aug 2110 - 2120	15/151	8 7	8.5 6.0	13.0 8.0	10.8 7.0	13.8 4.3
12 Aug 2135 - 2145	19/177	8 11	9.0 4.0	12.5 7.5	10.8 5.8	16.3 3.6
12 Aug 2155 - 2205	9/73	5 4	9.0 5.5	12.0 7.0	10.5 6.2	14.0 5.0
13 Aug 1535 - 1545	15/1500	3 5 7	9.0 7.5 5.5	10.0 8.0 7.0	9.5 7.8 6.2	9.0 5.4 2.3

Table 9, cont'd.

Species: Spottail shiner Collecting method: Seine Depth: 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
13 Aug 1550 - 1600	7/7	1 6	8.5 5.0	8.5 6.5	8.5 5.8	3.0 2.0
13 Aug 1605 - 1615	13/13	5 8	7.0 5.5	9.5 6.5	8.2 6.0	3.0 2.6
13 Aug 1625 - 1635	9/97	2 7	11.0 7.0	12.0 8.5	11.5 7.8	15.5 4.6
7 Sep 2053 - 2100	1/1	1	8.0	8.0	8.0	5.0
7 Sep 2105 - 2115	1/1	1	10.5	10.5	10.5	9.0
7 Sep 2200 - 2205	1/1	1	11.0	11.0	11.0	16.0
10 Sep 1423 - 1429	5/5	1 4	13.5 3.5	13.5 5.0	13.5 4.2	19.0 1.3
10 Sep 1435 - 1440	2/2	2	5.0	5.0	5.0	1.0
10 Sep 1447 - 1453	1/1	1	6.5	6.5	6.5	3.0
10 Sep 1510 - 1516	4/4	2 2	9.5 7.0	10.5 7.5	10.0 7.2	10.0 3.5
10 Sep 1521 - 1526	11/11	1 6 3 1	11.0 8.0 7.0 5.5	11.0 9.0 7.5 5.5	11.0 8.5 7.2 5.5	9.0 5.2 2.3 1.0
5 Oct 1630 - 1642	1/1	1	11.0	11.0	11.0	12.0
5 Oct 1650 - 1710	2/2	2	8.0	10.5	9.2	7.5

Table 9, cont'd.

Species: Spottail shiner Collecting method: Seine Depth: 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
5 Oct 1720 - 1730	8/8	8	8.5	11.5	10.0	12.5
5 Oct 2115 - 2145	15/154	5 9 1	10.0 8.0 5.0	12.0 9.0 5.0	11.0 8.5 5.0	19.0 6.7 1.0
5 Oct 2215 - 2240	15/150	4 7 4	11.5 9.0 4.5	13.5 10.0 5.0	12.5 9.5 4.8	23.8 10.7 1.0
1 Nov 2020 - 2040	1/1	1	12.0	12.0	12.0	18.0
1 Nov 2040 - 2110	1/1	1	8.0	8.0	8.0	4.0

Table 9, cont'd.

Species: Alewife Collecting method: Gillnet Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
25-26 May 1800 - 0845	1/1	1	17.5	17.5	17.5	50.0
14 Jul 1130 - 1500	6/6	6	15.0	20.0	17.5	35.8
14 Jul 1600 - 2030	17/17	17	15.0	18.0	16.5	38.8
15 Jul 1230 - 1600	2/2	2	16.0	19.5	17.8	35.0
17-18 Jul 2100 - 1000	46/287	3 43	20.0 13.0	22.5 19.0	21.2 16.0	71.7 37.1
18-19 Jul 2045 - 0930	49/322	49	14.0	20.5	17.2	40.7
12 Aug 0830 - 1345	13/115	13	15.0	19.0	17.0	38.3
12-13 Aug 2000 - 1115	40/225	18 18 4	16.0 14.0 12.0	18.5 15.0 13.5	17.2 14.5 12.8	41.3 31.4 21.3
4-5 Oct 1330 - 1030	7/7	1 6	19.5 14.0	19.5 17.0	19.5 15.5	80.0 35.8
6 Oct 0800 - 1300	3/3	3	15.5	17.5	16.5	40.0
1-2 Nov 1330 - 0830	4/23	3 1	17.0 15.0	18.5 15.0	17.8 15.0	60.0 40.0

Table 9, cont'd.

Species: Alewife Collecting method: Gillnet Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
11-12 Jun 1415 - 0900	15/75	6 6 3	17.5 16.0 15.0	21.0 18.0 16.5	19.3 17.0 15.8	57.5 42.2 27.0
11-12 Jun 1415 - 0900	18/18	18	16.5	19.0	17.8	43.8
13 Jun 0915 - 1545	4/4	4	18.0	21.3	20.2	55.0
13 Jun 0915 - 1545	2/2	2	18.2	18.7	18.4	40.0
15 Jul 1230 - 1600	1/1	1	17.0	17.0	17.0	30.0
17-18 Jul 2050 - 1000	18/18	18	15.0	19.0	17.0	40.6
18-19 Jul 2045 - 0930	15/15	7 8	18.0 14.0	20.0 17.5	19.0 15.8	51.4 40.0
10-11 Aug 2030 - 0830	56/256	5 51	18.0 12.0	20.0 17.5	19.0 14.8	53.0 31.6
12 Aug 0840 - 1330	4/42	4	14.5	17.0	15.8	37.5
12-13 Aug 2015 - 1100	46/213	46	13.0	19.0	16.0	37.6
4-5 Oct 1345 - 1045	9/9	1 8	19.0 15.5	19.0 17.5	19.0 16.5	50.0 43.8

Table 9, cont'd.

Species: Alewife Collecting method: Gillnet Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
1-2 Nov 1330 - 0830	1/6	1	17.0	17.0	17.0	45.0

Table 9, cont'd.

Species: Alewife Collecting method: Seine Depth: 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
28 Jun 2030 - 2050	9/9	9	14.5	19.5	16.5	28.8
28 Jun 2050 - 2110	11/11	10 1	13.0 7.5	17.0 7.5	15.0 7.5	27.0 3.0
28 Jun 2200 - 2230	15/26	15	14.5	19.0	16.8	61.3
13 Jul 2100 - 2115	37/37	7 30	14.0 6.5	19.0 9.0	16.5 7.7	30.7 6.7
13 Jul 2115 - 2120	92/92	2 90	14.0 7.0	18.0 10.5	16.0 8.8	30.0 5.7
13 Jul 2130 - 2135	32/32	3 29	16.5 7.0	17.0 11.0	16.8 9.0	35.0 6.9
14 Jul 1320 - 1330	56/56	56	6.5	10.5	8.5	5.4
14 Jul 1330 - 1341	26/26	26	7.0	9.0	8.0	4.4
14 Jul 1347 - 1355	33/33	33	7.0	9.5	8.2	5.5
15 Jul 1355 - 1405	7/7	7	8.0	10.0	9.0	7.1
15 Jul 1407 - 1412	1/1	1	8.5	8.5	8.5	6.0
15 Jul 1417 - 1421	25/25	25	7.0	9.0	8.0	5.2
18 Jul 2130 - 2145	26/26	19 7	12.5 6.5	20.0 11.0	15.8 8.8	28.9 6.4

Table 9, cont'd.

Species: Alewife Collecting method: Seine Depth: 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
6 Aug 2040 - 2047	31/31	2 18 11	13.5 8.5 7.0	17.5 10.5 8.5	15.5 9.5 7.8	30.0 7.8 3.6
6 Aug 2050 - 2057	5/5	5	8.0	10.0	9.0	7.0
6 Aug 2102 - 2108	1/1	1	8.0	8.0	8.0	2.5
6 Aug 2125 - 2132	4/4	3 1	15.0 10.5	17.5 10.5	16.2 10.5	33.3 10.0
6 Aug 2140 - 2145	17/17	10 7	10.5 7.0	14.0 9.5	12.2 8.2	14.0 7.1
6 Aug 2145 - 2150	22/22	4 18	14.0 8.0	17.0 10.5	15.5 9.2	23.8 7.8
12 Aug 2050 - 2100	1/1	1	8.5	8.5	8.5	4.0
12 Aug 2135 - 2145	5/5	2 3	15.0 3.5	16.0 4.0	15.5 3.8	30.0 0.3
12 Aug 2155 - 2205	7/7	7	3.5	4.5	4.0	0.6
13 Aug 1535 - 1545	1/1	1	8.0	8.0	8.0	4.0
7 Sep 2105 - 2115	3/3	3	14.0	17.0	15.5	30.0
7 Sep 2130 - 2140	1/1	1	18.5	18.5	18.5	50.0
10 Sep 1435 - 1440	1/1	1	6.5	6.5	6.5	3.0

Table 9, cont'd.

Species: Alewife Collecting method: Seine Depth: 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
10 Sep 1510 - 1516	2/2	2	6.5	7.0	6.8	3.0
5 Oct 2115 - 2145	12/12	12	6.5	8.0	7.2	2.5
5 Oct 2215 - 2240	9/9	2 1 6	18.0 15.5 4.5	20.0 15.5 6.0	19.0 15.5 5.2	80.0 40.0 1.5

Table 9, cont'd.

Species: Alewife Collecting method: Trawl Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
24 May 1430 - 1440	2/2	2	14.5	16.0	15.2	25.0
24 May 1445 - 1455	1/1	1	16.0	16.0	16.0	20.0
24 May 1510 - 1540	2/2	2	14.5	18.5	16.5	30.0
25 May -	15/87	15	11.0	19.5	15.2	25.7
11 Jun 1606 - 1611	38/367	25 13	15.5 8.5	18.5 15.5	17.0 12.0	39.0 26.9
11 Jun 1611 - 1616	26/223	19 4 3	15.6 13.3 7.8	19.0 14.8 12.5	16.2 14.1 10.2	39.2 19.5 10.0
15 Jul 1327 - 1337	2/2	2	16.0	16.5	16.2	30.0
18 Jul 2050 - 2100	3/34	3	15.0	17.5	16.8	51.7
18 Jul 2115 - 2125	9/89	9	13.0	19.5	16.2	35.6
12 Aug 1409 - 1419	13/13	13	14.0	17.5	15.8	31.5
12 Aug 1431 - 1441	11/11	6 5	17.0 12.5	18.5 14.0	17.8 13.2	45.8 17.8
9 Sep 1430 - 1445	68/567	1 55 12	16.5 5.0 2.5	16.5 7.5 4.0	16.5 6.2 3.2	40.0 2.2 0.2
9 Sep 1445 - 1500		1 1 7	17.0 8.0 5.5	17.0 8.0 6.5	17.0 8.0 6.0	40.0 6.0 2.0

Table 9, cont'd.

Species: Alewife Collecting method: Trawl Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
9 Sep	11/11	1	6.5	6.5	6.5	3.0
2044 -		7	4.0	5.0	4.5	0.9
2054		3	2.5	3.5	3.0	0.3
9 Sep	14/14	1	18.5	18.5	18.5	40.0
2107 -		1	6.5	6.5	6.5	3.0
2117		10	4.0	5.0	4.5	0.9
		2	2.5	3.5	3.0	0.5
19 Oct	2/2	2	4.0	4.5	4.2	0.8
1410 -						
1420						
19 Oct	1/1	1	4.0	4.0	4.0	1.0
1431 -						
1441						
19 Oct	3/38	3	4.5	5.0	4.8	1.3
1903 -						
1913						
19 Oct	40/40	40	3.0	4.5	3.8	0.5
1924 -						
1934						
2 Nov	12/12	2	16.5	18.0	17.2	37.5
1008 -		10	5.5	6.0	5.8	1.1
1018						
2 Nov	1/1	1	15.0	15.0	15.0	40.0
1028 -						
1038						

Table 9, cont'd.

Species: Alewife Collecting method: Trawl Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
11 Jun 1710 - 1715	15/149	5 5 3 2	16.5 15.0 12.0 9.5	21.5 16.5 15.0 10.5	19.0 15.8 13.5 10.0	45.7 33.5 28.6 6.5
11 Jun 1715 - 1720	28/192	10 9 9	16.0 14.0 8.5	19.5 17.0 13.5	17.8 15.5 11.0	45.0 33.3 16.7
17 Jul 1415 - 1425	6/6	1 5	20.0 16.0	20.0 17.0	20.0 16.5	- -
17 Jul 1445 - 1455	3/3	2 1	16.5 14.5	16.5 14.5	16.5 14.5	35.0 25.0
18 Jul 2137 - 2147	5/5	5	14.0	19.0	16.5	36.0
18 Jul 2159 - 2209	12/12	12	15.0	18.0	16.5	34.2
12 Aug 1451 - 1501	3/3	3	15.0	17.0	16.0	27.2
12 Aug 1513 - 1523	2/2	2	15.0	18.5	16.8	32.5
12 Aug 2116 - 2126	7/7	7	14.5	17.0	15.8	32.9
12 Aug 2139 - 2149	5/5	5	13.5	16.5	15.0	30.0
9 Sep 1400 - 1415	43/418	2 41	15.0 5.5	19.5 7.5	17.2 6.5	45.0 2.9
9 Sep 1415 - 1430	22/217	1 21	15.0 6.0	15.0 7.5	15.0 6.8	30.0 3.3
9 Sep 2127 - 2137	16/16	6 10	5.5 3.0	5.5 4.0	5.5 3.5	1.0 0.5

Table 9, cont'd.

Species: Alewife Collecting method: Trawl Depth: 9,1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
9 Sep	10/10	2	16.0	16.5	16.2	35.0
2150 -		1	7.0	7.0	7.0	4.0
2200		7	4.0	5.0	4.5	0.7
19 Oct	12/12	2	16.0	18.0	17.0	42.5
1320 -		10	4.0	6.5	5.2	1.6
1330						
19 Oct	37/329	5	17.0	18.5	17.8	49.0
1344 -		32	5.0	6.5	5.8	1.7
1354						
19 Oct	17/17	1	15.0	15.0	15.0	35.0
1944 -		16	3.0	4.5	3.8	0.5
1954						
19 Oct	20/20	13	3.5	5.0	4.2	0.6
2008 -		7	3.0	3.5	3.2	0.3
2018						
2 Nov	12/12	2	16.0	18.0	17.0	40.0
0944 -		1	8.0	8.0	8.0	4.0
0954		9	4.5	5.5	5.0	1.0

Table 9, cont'd.

Species: Rainbow smelt Collecting method: Gillnet Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
10 Aug 0930 - 1630	1/1	1	9.5	9.5	9.5	5.0
12-13 Aug 2000 - 1115	1/1	1	19.0	19.0	19.0	40.0
10 Sep 1050 - 1600	4/4	2 2	16.5 13.0	17.0 14.0	16.8 13.5	30.0 16.5
10-11 Sep 1800 - 1000	2/2	2	17.0	19.0	18.0	42.5
4-5 Oct 1330 - 1030	11/11	7 4	17.0 14.5	19.0 16.5	18.0 15.5	46.4 30.8
1-2 Nov 1330 - 0830	5/18	2 3	22.0 19.0	22.5 20.0	22.2 19.5	82.5 55.0

Table 9, cont'd.

Species: Rainbow smelt Collecting method: Gillnet Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
11-12 Jun 1415 - 0900	16/16	16	11.0	16.0	13.5	15.9
10 Sep 1105 - 1600	5/5	3 2	17.5 15.5	18.0 16.0	17.8 15.8	33.3 20.0
10-11 Sep 1800 - 1000	5/5	5	17.0	19.0	18.0	37.0
4-5 Oct 1345 - 1045	8/41	1 7	22.0 15.5	22.0 19.5	22.0 17.5	70.0 41.4
6 Oct 0815 - 1300	1/1	1	17.0	17.0	17.0	40.0
1-2 Nov 1330 - 0830	3/5	3	18.0	20.5	19.2	63.3

Table 9, cont'd.

Species: Rainbow smelt Collecting method: Trawl Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
24 May 1430 - 1440	15/102	15	-	-	7.0	10.9
24 May 1445 - 1455	9/9	9	-	-	6.4	1.1
24 May 1510 - 1520	3/3	3	6.0	7.0	6.2	1.0
25 May -	3/3	3	5.0	6.5	5.6	1.0
11 Jun 1606 - 1616	173/173	22 28 123	11.0 8.5 4.5	14.5 10.5 8.0	12.8 9.5 5.8	14.8 4.6 1.7
11 Jun 1626 - 1636	189/189	33 156	11.0 5.7	14.5 9.3	12.8 7.5	10.6 1.2
11 Aug 2215 - 2225	2/2	2	8.0	10.0	9.0	5.0
12 Aug 1431 - 1441	1/1	1	6.5	6.5	6.5	1.0
9 Sep 1430 - 1440	8/8	1 2 5	14.0 11.0 9.0	14.0 11.0 9.5	14.0 11.0 9.2	17.0 7.5 4.8
9 Sep 2044 - 2054	104/104	2 102	9.0 3.5	10.5 5.5	9.8 4.5	6.0 0.4
9 Sep 2107 - 2117	42/42	42	3.5	4.5	4.0	0.5
19 Oct 1410 - 1420	69/69	1 1 1 66	14.5 11.0 8.5 3.0	14.5 11.0 8.5 5.0	14.5 11.0 8.5 4.0	32.0 9.0 5.0 0.6
19 Oct 1431 - 1441	71/71	71	3.5	6.0	4.8	0.6

Table 9, cont'd.

Species: Rainbow smelt Collecting method: Trawl Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
19 Oct 1903 - 1913	19/19	19	4.0	5.5	4.8	0.3
19 Oct 1924 - 1934	37/37	37	4.0	6.0	5.0	0.6
2 Nov 1008 - 1018	7/7	5 2	17.5 13.0	18.0 14.0	17.8 13.5	42.0 27.5
2 Nov 1028 - 1038	2/2	2	9.0	11.5	10.2	8.5

Table 9, cont'd.

Species: Rainbow smelt Collecting method: Trawl Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
11 Jun 1710 - 1720	157/157	4 3 15 35 100	12.5 10.0 8.0 7.0 5.5	14.5 10.5 9.5 7.5 7.0	13.5 10.2 8.8 7.2 6.2	15.0 8.7 3.7 2.1 1.5
11 Jun 1730 - 1740	223/223	5 8 9 201	13.5 10.5 8.5 5.5	16.5 13.0 10.0 9.0	15.0 12.2 9.2 7.2	30.0 12.5 7.8 1.9
18 Jul 2137 - 2147	3/3	3	6.0	8.0	7.0	2.8
12 Aug 1451 - 1501	4/4	1 3	12.0 7.5	12.0 8.5	12.0 8.0	9.5 2.8
12 Aug 1513 - 1523	2/2	2	8.0	8.5	8.2	3.5
12 Aug 2139 - 2149	2/2	2	8.0	10.0	9.0	4.0
9 Sep 1400 - 1415	26/26	3 8 15	14.0 10.0 7.5	16.0 12.0 9.0	15.0 11.0 8.2	23.3 10.0 4.7
9 Sep 1415 - 1425	2/2	2	12.0	12.5	12.2	11.5
9 Sep 2127 - 2137	20/20	20	3.5	4.5	4.0	0.4
9 Sep 2130 - 2200	6/6	6	4.0	4.5	4.2	0.3
19 Oct 1320 - 1330	30/30	2 3 3 22	18.0 13.0 10.5 4.0	21.0 14.5 11.5 6.5	19.5 13.8 11.0 5.2	47.5 21.3 8.3 1.5
19 Oct 1344 - 1354	118/118	1 2 3 112	16.5 12.0 10.0 4.0	16.5 13.5 10.0 6.0	16.5 12.8 10.0 5.0	35.0 13.5 6.0 0.7

Table 9, cont'd.

Species: Rainbow smelt Collecting method: Trawl Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
19 Oct 1944 - 1954	19/19	19	4.5	6.0	5.2	0.7
19 Oct 2008 - 2018	12/12	12	4.0	6.0	5.0	0.7
2 Nov 0922 - 0932	15/15	1 14	12.5 5.0	12.5 7.0	12.5 6.0	12.0 1.3
2 Nov 0944 - 0954	36/36	1 35	13.0 4.5	13.0 6.0	13.0 5.2	12.0 0.8

Table 9, cont'd.

Species: Rainbow smelt Collecting method: Seine Depth: 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
13 Jul 2115 - 2120	1/1	1	6.0	6.0	6.0	1.5
6 Aug 2125 - 2132	2/2	2	11.0	13.5	12.2	12.5
7 Sep 2130 - 2140	1/1	1	9.5	9.5	9.5	5.0
7 Sep 2200 - 2205	1/1	1	10.5	10.5	10.5	9.0
5 Oct 2115 - 2145	18/18	4 7 6 1	16.0 13.0 11.5 8.5	18.0 15.0 12.0 8.5	17.0 14.0 11.8 8.5	41.3 24.3 14.2 4.0
5 Oct 2215 - 2240	3/3	3	16.5	18.0	17.2	41.7
1 Nov 2000 - 2020	4/4	2 2	16.5 13.5	19.0 15.0	17.2 14.2	41.5 21.5
1 Nov 2020 - 2040	3/3	1 2	18.5 14.0	18.5 15.0	18.5 14.5	50.0 22.5
1 Nov 2040 - 2110	1/1	1	20.5	20.5	20.5	65.0

Table 9, cont'd.

Species: Yellow Perch Collecting method: Gillnet Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
14 Jul 1130 - 1500	35/35	3 5 13 13 1	28.0 24.0 20.0 15.0 13.5	29.0 26.5 23.0 18.5 13.5	28.5 25.3 21.5 16.8 13.5	391.7 222.0 126.9 60.8 35.0
14 Jul 1600 - 2030	38/38	3 8 14 13	28.0 24.0 20.0 15.0	30.5 26.0 23.5 19.5	29.3 25.0 21.8 17.2	363.3 207.5 142.5 66.9
15 Jul 1230 - 1600	53/53	3 4 13 24 9	27.0 25.5 20.0 16.0 14.0	30.5 26.5 24.0 19.5 15.5	28.8 26.0 22.0 17.8 14.8	356.7 285.0 149.2 69.4 41.7
17 Jul 2100 - 1000	96/96	6 5 11 38 34 2	30.0 27.5 24.0 20.0 15.0 12.0	31.5 29.0 26.0 23.5 19.5 14.5	30.8 28.2 25.0 21.8 17.2 13.2	448.3 325.0 219.6 143.4 52.4 22.5
18-19 Jul 2045 - 0930	39/107	3 5 3 17 11	30.0 28.0 24.5 20.0 16.0	32.0 29.0 26.5 23.5 19.5	31.0 28.5 25.5 21.8 17.8	485.0 365.0 250.0 133.8 66.4
10 Aug 0930 - 1630	48/48	8 8 10 4 8 10	30.0 28.0 23.0 18.0 13.0 10.5	32.5 29.5 26.5 20.0 16.5 12.5	31.2 28.8 24.8 19.0 14.8 11.5	467.1 398.1 227.0 77.5 37.5 19.5
10-11 Aug 2015 - 0830	24/32	1 2 3 3 8 7	34.5 28.0 26.0 23.0 15.0 11.0	34.5 29.5 27.0 24.0 19.5 12.5	34.5 28.8 26.5 23.5 17.2 11.8	700.0 472.5 281.7 178.3 68.8 20.4
12 Aug 0830 - 1345	11/11	3 1 4 1 2	32.0 29.0 26.0 22.5 10.5	33.0 29.0 27.5 22.5 10.5	32.5 29.0 26.8 22.5 10.5	573.3 310.0 312.5 150.0 14.5

Table 9, cont'd.

Species: Yellow Perch Collecting method: Gillnet Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
12-13 Aug 2000 - 1115	4/4	2 1 1	22.5 18.5 10.0	23.5 18.5 10.0	23.0 18.5 10.0	165.0 70.0 11.0
8 Sep 1130 - 1600	3/3	3	20.5	23.0	21.8	126.7
10 Sep 1050 - 1600	46/46	5 21 16 4	24.0 20.0 17.0 14.5	26.0 23.5 19.5 16.5	25.0 21.8 18.2 15.5	201.0 126.4 85.6 45.0
10-11 Sep 1800 - 1000	26/128	1 2 3 2 14 4	30.5 28.5 22.0 20.0 16.0 11.5	30.5 29.0 24.5 21.0 19.5 14.0	30.5 28.8 23.2 20.5 17.8 12.8	520.0 475.0 186.7 119.0 85.6 25.0
4-5 Oct 1330 - 1030	18/18	4 6 4 4	23.5 20.0 18.0 15.5	25.0 22.5 19.5 16.5	24.2 21.2 18.8 16.0	216.3 166.7 92.5 53.8
6 Oct 0800 - 1300	13/13	1 1 9 2	30.0 26.5 20.0 16.5	30.0 26.5 23.5 18.5	30.0 26.5 21.8 17.5	350.0 330.0 128.3 42.5
1-2 Nov 1330 - 0830	9/18	1 1 4 3	25.0 21.0 16.0 14.5	25.0 21.0 17.5 15.0	25.0 21.0 16.8 14.8	245.0 135.0 65.0 40.0

Table 9, cont'd.

Species: Yellow Perch Collecting method: Gillnet Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
11-12 Jun	102/102	4	28.0	29.0	28.5	348.8
1415 - 0900		93	20.0	26.0	23.0	166.2
		5	15.0	19.5	17.2	62.0
11-12 Jun	4/4	1	30.0	30.0	30.0	350.0
1415 - 0900		3	23.0	25.5	24.2	216.7
13 Jun	17/17	4	26.7	28.7	27.7	310.0
0915 - 1545		13	21.5	25.0	22.8	166.2
13 Jun	3/3	3	28.5	29.2	28.9	339.0
0915 - 1545						
14 Jul	31/31	5	26.5	28.0	27.2	328.0
1130 - 1500		26	21.5	25.5	23.5	167.9
14 Jul	59/59	5	28.0	30.5	29.2	396.0
1600 - 2030		17	24.0	26.0	25.0	225.9
		37	21.0	23.5	22.2	174.6
15 Jul	30/30	3	28.0	31.0	29.5	373.3
1230 - 1600		8	24.0	26.0	25.0	219.4
		19	22.0	23.5	22.8	155.8
17 Jul	22/85	3	31.0	31.5	31.2	480.0
2050 - 1000		2	28.5	29.0	28.7	385.0
		10	24.0	26.5	25.2	214.0
		7	22.5	23.5	23.0	145.0
18-19 Jul	22/66	4	27.0	28.5	27.8	336.3
2045 - 0930		16	23.0	25.5	24.2	190.9
		2	21.0	22.5	21.8	142.5
10 Aug	33/33	9	30.0	32.0	31.0	488.9
0930 - 1630		11	27.0	29.5	28.2	375.0
		5	25.0	26.5	25.8	246.0
		6	22.0	24.5	23.2	147.5
		1	19.0	19.0	19.0	90.0
		1	11.0	11.0	11.0	15.0

Table 9 , cont'd.

Species: Yellow Perch Collecting method: Gillnet Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
10-11 Aug 2030 - 0830	9/13	1 2 1 4 1	30.0 28.5 22.5 18.5 12.0	30.0 29.5 22.5 19.5 12.0	30.0 29.0 22.5 19.0 12.0	430.0 395.0 150.0 86.3 10.0
12 Aug 0840 - 1330	15/15	1 2 6 6	29.0 20.0 16.5 11.0	29.0 22.5 19.5 12.5	29.0 21.2 18.0 11.8	420.0 120.0 76.7 19.1
12-13 Aug 2015 - 1100	15/42	1 2 6 5 1	24.0 22.0 19.0 14.5 13.0	24.0 22.0 21.5 17.5 13.0	24.0 22.0 20.2 16.0 13.0	180.0 155.0 110.8 58.0 20.0
8 Sep 1130 - 1600	4/4	1 1 2	23.5 19.0 14.5	23.5 19.0 15.0	23.5 19.0 14.8	180.0 100.0 40.0
10 Sep 1105 - 1600	30/30	1 4 4 8 12 1	32.5 27.0 23.0 20.0 15.5 11.0	32.5 29.0 24.0 21.5 19.5 11.0	32.5 28.0 23.5 20.8 17.0 11.0	590.0 395.0 182.5 108.8 78.3 15.0
10-11 Sep 1800 - 1000	20/210	1 2 3 5 8 1	29.5 26.0 22.5 20.0 16.5 13.5	29.5 27.5 23.5 22.0 19.5 13.5	29.5 26.8 23.0 21.0 18.0 13.5	385.0 327.5 180.0 133.0 91.9 30.0
4-5 Oct 1345 - 1045	22/22	1 1 3 10 3 4	34.0 32.0 28.0 21.0 16.0 13.0	34.0 32.0 30.0 24.5 19.0 15.0	34.0 32.0 29.0 22.8 17.5 14.0	710.0 580.0 401.7 184.0 70.0 32.5
6 Oct 0815 - 1300	6/6	2 2 1 1	26.0 23.0 19.0 14.5	27.0 23.5 19.0 14.5	26.5 23.3 19.0 14.5	265.0 177.5 90.0 35.0

Table 9, cont'd.

Species: Yellow Perch Collecting method: Gillnet Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
1-2	7/38	1	28.0	28.0	28.0	390.0
Nov		1	24.0	24.0	24.0	195.0
1330 -		3	21.0	22.5	21.8	161.7
0830		2	19.0	19.5	19.2	100.0

Table 9, cont'd.

Species: Yellow Perch Collecting method: Trawl Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
11 Jun 1606 - 1611	39/39	3 1 33 2	20.0 18.0 13.5 9.7	21.7 18.0 16.7 10.7	20.9 18.0 15.1 10.2	128.3 80.0 46.5 9.0
11 Jun 1611 - 1616	26/26	1 22 1 2	22.0 14.5 13.5 8.5	22.0 17.5 13.5 11.0	22.0 16.0 13.5 9.8	140.0 43.6 30.0 10.0
17 Jul 1327 - 1337	2/2	1 1	19.0 10.0	19.0 10.0	19.0 10.0	90.0 13.0
18 Jul 2050 - 2100	59/59	2 2 23 29 3	29.0 24.0 20.0 15.0 8.0	31.0 25.0 23.0 19.0 11.0	30.0 24.5 22.5 17.0 9.5	472.5 187.5 120.0 77.4 11.3
18 Jul 2115 - 2125	3/3	3	17.0	18.5	17.8	66.7
11 Aug 2106 - 2116	2/2	2	10.5	12.0	11.2	20.5
11 Aug 2215 - 2225	2/2	2	12.5	13.0	12.8	27.5
12 Aug 1409 - 1419	9/9	6 3	11.0 9.5	13.5 10.5	12.2 10.0	21.6 12.8
12 Aug 1431 - 1441	2/2	1 1	16.5 12.5	16.5 12.5	16.5 12.5	60.0 24.0
9 Sep 1430 - 1445	33/33	4 23 6	19.0 4.5 3.5	20.5 6.0 4.0	19.8 5.2 3.8	105.0 0.9 0.7
9 Sep 1445 - 1500	9/9	1 2 1 5	18.5 14.0 11.5 4.0	18.5 15.0 11.5 5.5	18.5 14.5 11.5 4.8	90.0 35.0 17.0 1.2
9 Sep 2044 - 2054	5/5	2 1 2	19.0 16.5 5.0	20.0 16.5 5.0	19.5 16.5 5.0	100.0 60.0 1.0

Table 9, cont'd.

Species: Yellow Perch Collecting method: Trawl Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
9 Sep 2107 - 2117	7/7	3 1 3	19.5 12.0 5.0	21.5 12.0 5.5	20.5 12.0 5.2	116.7 22.0 2.0
19 Oct 1410 - 1420	5/5	1 4	17.5 6.0	17.5 7.5	17.5 6.8	85.0 3.0
19 Oct 1431 - 1441	11/11	11	5.0	6.5	5.8	2.1
19 Oct 1903 - 1913	1/1	1	6.0	6.0	6.0	3.0
19 Oct 1924 - 1934	6/6	1 5	22.0 5.5	22.0 6.0	22.0 5.8	85.0 2.2
1 Nov 2100 - 2110	1/1	1	7.0	7.0	7.0	4.0
1 Nov 2123 - 2133	2/2	2	6.0	6.0	6.0	2.5
2 Nov 1008 - 1018	4/4	4	6.5	8.0	7.2	3.8
2 Nov 1028 - 1038	1/1	1	8.0	8.0	8.0	7.0

Table 9, cont'd.

Species: Yellow Perch Collecting method: Trawl Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
11 Jun	5/5	2	22.5	22.5	22.5	147.5
1710 -		2	16.0	16.5	16.2	52.5
1715		1	11.0	11.0	11.0	19.0
11 Jun	13/13	2	18.5	19.5	19.0	107.5
1715 -		5	14.0	16.0	15.0	62.0
1720		6	7.5	9.0	8.2	10.8
18 Jul	1/1	1	25.5	25.5	25.5	225.0
2159 -						
2209						
12 Aug	9/9	1	19.5	19.5	19.5	100.0
1451 -		2	15.0	16.0	15.5	55.0
1501		6	10.5	12.5	11.5	15.9
12 Aug	7/7	2	20.5	20.5	20.5	120.0
2116 -		4	18.0	19.5	18.8	90.0
2126		1	13.5	13.5	13.5	20.0
12 Aug	18/18	6	20.0	22.5	21.2	118.3
2139 -		11	16.5	19.5	18.0	87.3
2149		1	11.0	11.0	11.0	17.0
9 Sep	5/5	1	22.5	22.5	22.5	160.0
1400 -		2	15.0	16.5	15.8	50.0
1415		2	5.5	5.5	5.5	2.0
9 Sep	2/2	1	20.0	20.0	20.0	110.0
1415 -		1	11.0	11.0	11.0	15.0
1430						
9 Sep	2/2	2	18.5	19.5	19.0	90.0
2127 -						
2137						
9 Sep	2/2	2	19.5	20.0	19.8	100.0
2150 -						
2200						
19 Oct	10/10	1	21.5	21.5	21.5	140.0
1320 -		9	5.5	8.0	6.8	3.3
1330						
19 Oct	8/8	1	23.5	23.5	23.5	205.0
1344 -		5	6.0	7.0	6.5	3.0
1354		2	4.5	5.0	4.8	1.5
19 Oct	9/9	1	18.0	18.0	18.0	95.0
1944 -		8	5.5	7.5	6.5	2.6
1954						

Table 9, cont'd.

Species: Yellow Perch Collecting method: Trawl Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
19 Oct 2008 - 2018	4/4	4	6.5	7.0	6.8	2.8
1 Nov 2011 - 2021	1/1	1	20.5	20.5	20.5	135.0
1 Nov 2037 - 2047	4/4	1 3	21.5 6.5	21.5 8.0	21.5 7.2	160.0 4.7
2 Nov 0922 - 0932	2/2	2	6.0	8.0	7.0	4.5
2 Nov 0944 - 0954	3/3	3	6.5	7.0	6.8	3.0

Table 9 , cont'd.

Species: Yellow Perch Collecting method: Seine Depth: 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
28 Jun 2030 - 2110	1/1	1	10.5	10.5	10.5	10.0
28 Jun 2200 - 2230	8/8	1 4 3	20.0 15.0 8.0	20.0 17.5 11.5	20.0 16.3 9.8	100.0 47.5 -
13 Jul 2100 - 2115	2/2	2	15.0	16.5	15.8	50.0
13 Jul 2115 - 2120	2/2	1 1	17.0 8.0	17.0 8.0	17.0 8.0	75.0 7.0
13 Jul 2130 - 2135	5/5	2 3	16.5 10.5	17.5 12.0	17.0 11.2	65.0 18.3
14 Jul 1347 - 1355	7/7	2 5	10.5 8.0	11.0 9.5	10.8 8.8	15.0 8.8
15 Jul 1417 - 1421	5/5	5	9.0	10.0	9.5	11.0
18 Jul 2130 - 2145	1/1	1	11.5	11.5	11.5	19.0
6 Aug 2040 - 2047	25/25	1 2 22	16.5 12.5 9.0	16.5 13.5 11.5	16.5 13.0 10.2	55.0 22.5 13.2
6 Aug 2050 - 2057	1/1	1	11.5	11.5	11.5	20.0
6 Aug 2102 - 2108	30/30	1 4 12 13	23.0 12.5 11.0 8.5	23.0 14.0 11.5 10.5	23.0 13.2 11.2 9.5	160.0 23.8 14.6 11.2
6 Aug 2125 - 2132	10/10	1 1 8	16.0 12.0 10.0	16.0 12.0 11.0	16.0 12.0 10.5	45.0 20.0 13.1

Table 9, cont'd.

Species: Yellow Perch Collecting method: Seine Depth: 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
6 Aug 2140 - 2145	21/21	2 2 10 7	17.5 14.5 11.0 9.5	19.0 16.0 12.5 10.5	18.2 15.2 11.8 10.0	72.5 42.5 18.0 11.4
6 Aug 2145 - 2150	33/33	5 6 14 8	16.5 13.0 11.0 8.0	19.0 15.0 12.0 10.5	17.8 14.0 11.5 9.2	68.0 30.0 17.9 11.2
12 Aug 2030 - 2040	1/1	1	9.5	9.5	9.5	11.0
12 Aug 2050 - 2100	1/1	1	12.0	12.0	12.0	20.0
12 Aug 2135 - 2145	22/22	1 2 18 1	15.0 12.5 10.0 8.5	15.0 13.0 12.0 8.5	15.0 12.8 11.0 8.5	55.0 26.5 18.6 8.0
7 Sep 2210 - 2220	2/2	1 1	16.0 11.0	16.0 11.0	16.0 11.0	50.0 16.0
10 Sep 1423 - 1429	5/5	1 4	20.5 6.5	20.5 4.5	20.5 5.5	100.0 1.3
10 Sep 1435 - 1440	4/4	4	5.0	5.5	5.2	1.8
10 Sep 1447 - 1453	1/1	1	19.0	19.0	19.0	90.0
10 Sep 1510 - 1516	8/8	8	4.0	5.5	4.8	1.4
10 Sep 1521 - 1526	6/6	6	4.5	5.5	5.0	1.3
5 Oct 1720 - 1730	1/1	1	17.5	17.5	17.5	60.0

Table 9, cont'd.

Species: Yellow Perch **Collecting method:** Seine **Depth:** 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
5 Oct 2115 - 2145	2/2	2	4.0	6.0	5.0	2.0

Table 9, cont'd.

Species: Trout-perch Collecting method: Gillnet Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
10 Aug 0930 - 1630	1/1	1	14.0	14.0	14.0	25.0
10-11 Aug 2030 - 0830	1/1	1	14.0	14.0	14.0	20.0
12-13 Aug 2000 - 1115	2/2	2	12.5	12.5	12.5	17.5
10-11 Sep 1800 - 1000	10/10	10	11.0	13.5	12.2	19.5

Table 9, cont'd.

Species: Trout-perch Collecting method: Gillnet Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
10 Aug 0930 - 1630	1/1	1	13.0	13.0	13.0	20.0
10-11 Aug 2015 - 0830	1/1	1	12.0	12.0	12.0	18.0
12-13 Aug 2015 - 1100	7/7	7	12.0	14.0	13.0	21.4
10-11 Sep 1800 - 1000	1/1	1	13.0	13.0	13.0	18.0
1-2 Nov 1330 - 0830	4/4	4	13.0	15.0	14.0	31.3

Table 9, cont'd.

Species: Trout-perch Collecting method: Trawl Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
11 Jun 1606 - 1616	23/23	5 6 12	11.0 5.0 3.0	13.5 6.5 4.5	11.8 5.8 3.8	18.0 1.6 0.6
11 Jun 1625 - 1635	61/61	9 6 46	8.7 5.5 2.0	12.6 8.2 5.0	10.6 6.8 3.5	13.3 2.9 0.6
18 Jul 2050 - 2100	38/38	38	3.5	5.0	4.2	1.2
18 Jul 2115 - 2125	37/37	37	5.0	11.0	8.0	4.6
11 Aug 2106 - 2116	30/30	6 4 20	12.0 8.0 4.0	13.0 10.5 6.5	12.5 9.2 5.2	26.7 10.0 4.3
11 Aug 2215 - 2225	33/33	14 19	9.0 4.0	13.0 7.0	11.0 5.5	13.6 1.6
12 Aug 1409 - 1419	3/3	1 2	10.5 5.5	10.5 5.5	10.5 5.5	11.0 1.5
12 Aug 1431 - 1441	5/5	1 2 2	13.0 9.0 4.5	13.0 11.0 4.5	13.0 10.0 4.5	21.5 10.5 0.5
9 Sep 1430 - 1440	20/20	2 18	9.0 6.5	10.0 8.0	9.5 7.2	3.0 3.9
9 Sep 1445 - 1455	16/16	1 5 10	12.5 9.0 6.0	12.5 10.0 8.0	12.5 9.5 7.0	19.0 8.0 3.5
9 Sep 2044 - 2054	54/54	4 13 8 29	13.0 9.5 6.5 2.0	14.0 12.0 9.0 6.0	13.5 10.8 7.8 4.0	27.5 16.2 5.0 1.4
9 Sep 2107 - 2117	25/25	6 3 16	11.0 7.0 4.0	13.5 9.0 6.0	12.2 8.0 5.0	20.0 5.7 1.3
19 Oct 1410 - 1420	2/19	2	10.5	12.5	11.5	16.0

Table 9, cont'd.

Species: Trout-perch Collecting method: Trawl Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
19 Oct	4/46	3	10.0	12.5	11.2	15.0
1431 - 1441		1	7.0	7.0	7.0	4.0
19 Oct	14/64	4	12.0	13.5	12.8	20.0
1903 -		8	10.0	10.0	10.0	1.3
1913		1	7.0	7.0	7.0	3.0
		1	2.0	2.0	2.0	0.5
19 Oct	8/79	2	13.5	14.0	13.8	25.0
1924 -		3	12.5	12.5	12.5	18.3
1934		1	9.0	9.0	9.0	8.0
		2	7.0	8.0	7.5	4.5
1 Nov	2/2	2	12.0	12.5	12.2	17.5
2100 - 2110						
1 Nov	6/6	3	11.5	13.0	12.2	20.0
2123 -		2	11.5	11.5	11.5	15.0
2133		1	9.5	9.5	9.5	9.0

Table 9, cont'd.

Species: Trout-perch Collecting method: Trawl Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
11 Jun 1710 - 1720	58/58	4 4 50	11.0 7.0 2.5	14.0 9.0 6.5	12.5 8.0 4.5	21.4 6.6 0.9
11 Jun 1730 - 1740	94/94	6 4 84	9.5 7.0 3.0	12.5 7.5 6.0	11.0 7.2 4.5	16.7 3.8 0.8
18 Jul 2137 - 2147	128/128	29 99	9.5 3.5	13.0 6.0	11.2 4.8	14.1 1.2
18 Jul 2159 - 2209	182/182	80 102	8.0 3.5	13.0 7.0	10.5 5.2	15.8 1.4
12 Aug 1451 - 1501	16/16	3 13	9.0 4.5	12.5 7.0	10.8 6.2	14.0 1.7
12 Aug 1513 - 1523	25/25	1 19 5	11.5 5.0 4.0	11.5 6.0 4.5	11.5 5.5 4.2	5.0 1.6 0.8
12 Aug 2116 - 2126	36/36	22 14	8.0 3.5	16.0 5.0	12.0 4.2	15.5 1.4
12 Aug 2139 - 2149	53/53	26 14 13	11.5 8.5 3.5	14.0 11.5 5.5	12.8 10.0 4.5	21.2 10.7 1.2
9 Sep 1400 - 1410	7/73	1 1 5	13.0 10.0 6.5	13.0 10.0 7.5	13.0 10.0 7.0	22.0 19.0 3.2
9 Sep 1415 - 1425	3/26	1 1 1	11.5 10.0 5.5	11.5 10.0 5.5	11.5 10.0 5.5	16.0 10.0 2.0
9 Sep 2127 - 2137	36/36	9 9 2 9 7	12.0 10.0 9.0 6.5 4.5	14.0 11.5 9.5 8.0 5.5	13.0 10.8 9.2 7.2 5.0	22.2 14.4 3.0 3.3 1.3
9 Sep 2150 - 2200	5/5	2 1 2	12.5 8.0 4.5	13.0 8.0 4.5	12.8 8.0 4.5	20.0 5.0 1.0

Table 9, cont'd.

Species: Trout-perch Collecting method: Trawl Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
19 Oct 1320 - 1330	15/154	8 1 5 1	11.5 10.0 7.0 5.0	14.0 10.0 8.0 5.0	12.8 10.0 7.5 5.0	25.0 10.0 4.2 2.0
19 Oct 1344 - 1354	10/105	6 3 1	12.0 10.0 5.5	14.5 12.0 5.5	13.2 11.0 5.5	24.2 13.0 2.0
19 Oct 1944 - 1954	7/72	4 3	13.5 5.5	13.5 7.5	13.5 6.5	27.5 2.7
19 Oct 2008 - 2018	5/56	1 3 1	13.5 10.0 8.5	13.5 12.0 8.5	13.5 11.0 8.5	20.0 16.0 7.0
1 Nov 2011 - 2021	1/14	1	12.5	12.5	12.5	17.0
1 Nov 2037 - 2047	4/4	3 1	12.5 8.0	13.5 8.0	13.0 8.0	23.3 5.0

Table 9, cont'd.

Species: Trout-perch Collecting method: Seine Depth: 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
18 Jul 2130 - 2145	3/3	3	3.0	3.0	3.0	0.5
6 Aug 2102 - 2108	1/1	1	11.5	11.5	11.5	10.0
6 Aug 2125 - 2132	3/3	1 1 1	15.0 10.0 5.5	15.0 10.0 5.5	15.0 10.0 5.5	30.0 10.0 2.5
6 Aug 2140 - 2145	1/1	1	10.0	10.0	10.0	11.0
12 Aug 2030 - 2040	7/7	1 6	8.0 4.5	8.0 6.5	8.0 5.5	5.0 1.7
12 Aug 2050 - 2100	53/53	15 38	8.5 4.5	10.5 8.0	9.5 6.2	8.7 2.4
12 Aug 2110 - 2120	19/19	6 13	8.0 4.5	10.0 7.0	9.0 5.8	8.3 2.3
12 Aug 2135 - 2145	15/15	3 12	9.5 5.0	13.0 7.5	11.2 6.2	16.7 3.3
12 Aug 2155 - 2205	43/43	9 34	8.0 5.5	11.0 7.5	9.5 6.5	10.0 2.6
7 Sep 2053 - 2100	1/1	1	7.5	7.5	7.5	3.0
7 Sep 2210 - 2220	3/3	1 2	13.0 8.0	13.0 9.5	13.0 8.8	21.0 16.5
5 Oct 1630 - 1642	1/1	1	11.0	11.0	11.0	14.0
5 Oct 2115 - 2145	5/59	3 2	11.0 8.0	11.5 8.5	11.2 8.2	15.0 5.0

Table 9, cont'd.

Species: Trout-perch Collecting method: Seine Depth: 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
5 Oct	24/24	7	11.5	13.5	12.5	21.2
2215 -		10	9.5	11.0	10.8	11.5
2240		7	8.0	8.5	8.2	5.0
1 Nov	1/1	1	11.5	11.5	11.5	16.0
2000 -						
2020						
1 Nov	1/1	1	10.5	10.5	10.5	12.0
2020 -						
2040						

Table 9, cont'd.

Species: Johnny darter Collecting method: Trawl Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
24 May 1430 - 1440	1/1	1	6.5	6.5	6.5	5.0
11 Jun 1606 - 1616	13/13	8 5	5.0 4.0	6.5 5.0	5.8 4.5	2.3 0.7
11 Jun 1606 - 1616	18/18	7 11	5.6 3.5	7.0 5.0	6.2 4.2	1.6 0.7
11 Aug 2106 - 2116	4/4	4	3.5	6.0	4.8	1.3
11 Aug 2215 - 2225	3/3	3	5.0	6.0	5.5	1.7
12 Aug 1409 - 1419	1/1	1	4.5	4.5	4.5	0.5
12 Aug 1431 - 1441	1/1	1	4.5	4.5	4.5	0.5
9 Sep 1430 - 1440	4/4	4	5.5	6.5	6.0	1.8
9 Sep 2044 - 2054	3/3	1 2	5.0 3.0	5.0 3.5	5.0 3.2	1.0 0.5
9 Sep 2107 - 2117	5/5	5	2.5	4.5	3.5	1.0
19 Oct 1410 - 1420	1/1	1	6.0	6.0	6.0	2.0
19 Oct 1431 - 1441	1/1	1	4.0	4.0	4.0	0.5
19 Oct 1903 - 1913	1/1	1	4.0	4.0	4.0	1.0

Table 9, cont'd.

Species: Johnny darter Collecting method: Trawl Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
19 Oct 1924 - 1934	3/3	3	4.0	4.0	4.0	0.7
1 Nov 2100 - 2110	1/1	1	4.0	4.0	4.0	0.5
1 Nov 2123 - 2133	2/2	2	4.0	4.5	4.2	1.0
2 Nov 1028 - 1038	1/1	1	4.5	4.5	4.5	1.0

Table 9, cont'd.

Species: Johnny darter Collecting method: Trawl Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
11 Jun	2/2	1	5.5	5.5	5.5	2.0
1710 - 1720		1	3.5	3.5	3.5	0.5
11 Jun	19/19	14	5.0	7.0	6.0	2.1
1710 - 1720		5	3.5	4.5	4.0	0.8
12 Aug	3/3	3	5.0	6.0	5.5	3.3
1513 - 1523						
12 Aug	1/1	1	4.5	4.5	4.5	1.0
2116 - 2126						
12 Aug	2/2	2	3.5	5.0	4.2	0.8
2139 - 2149						
9 Sep	4/4	3	5.0	7.0	6.0	2.0
1400 - 1410		1	3.5	3.5	3.5	0.5
9 Sep	3/3	3	4.0	5.5	4.8	0.8
2127 - 2137						
9 Sep	3/3	3	3.5	4.0	3.8	1.0
2150 - 2200						
19 Oct	3/3	3	4.5	5.5	5.0	1.3
1320 - 1330						
19 Oct	3/3	3	3.5	4.5	4.0	0.7
1344 - 1354						
19 Oct	7/7	4	5.0	7.0	6.0	2.3
1944 - 1954		3	4.0	4.5	4.2	0.7
19 Oct	4/4	4	3.0	4.0	3.5	0.9
2008 - 2018						
1 Nov	7/7	7	4.0	4.5	4.2	0.8
2011 - 2021						

Table 9, cont'd.

Species: Johnny darter **Collecting method:** Trawl **Depth:** 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
1 Nov 2037 - 2047	5/5	5	3.5	4.0	3.8	0.4

Table 9, cont'd.

Species: Johnny darter Collecting method: Seine Depth: 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
28 Jun 2200 - 2230	22/22	22	4.0	7.0	5.5	-
13 Jul 2130 - 2135	1/1	1	4.5	4.5	4.5	1.0
12 Aug 2030 - 2040	1/1	1	5.5	5.5	5.5	1.0
10 Sep 1423 - 1429	1/1	1	6.5	6.5	6.5	2.0
5 Oct 1630 - 1642	2/2	2	4.5	4.5	4.5	1.5

Table 9, cont'd.

Species: White sucker Collecting method: Gillnet Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
25-26 May 1800 - 0845	1/1	1	46.0	46.0	46.0	1050.0
17-18 Jul 2100 - 1000	2/2	2	44.0	46.5	45.2	1157.5
10 Aug 0930 - 1630	6/6	3 2 1	42.0 39.0 35.0	45.0 39.5 35.0	43.5 39.2 35.0	1118.3 752.5 500.0
10-11 Aug 2015 - 0830	11/11	3 2 2 1 3	51.0 43.0 36.0 30.5 24.0	53.0 44.0 38.0 30.5 27.0	52.0 43.5 37.0 30.5 25.5	1836.7 1100.0 737.5 385.0 228.3
12 Aug 0830 - 1345	1/1	1	43.0	43.0	43.0	1240.0
12-13 Aug 2000 - 1115	6/6	1 1 4	42.0 29.5 25.0	42.0 29.5 26.5	42.0 29.5 25.8	850.0 357.0 210.0
10 Sep 1050 - 1600	3/3	1 2	49.0 35.5	49.0 38.0	49.0 36.8	- 695.0
10-11 Sep 1800 - 1000	2/2	1 1	46.0 36.0	46.0 36.0	46.0 36.0	1450.0 680.0
4-5 Oct 1330 - 1030	6/6	2 1 1 2	49.0 46.0 35.5 31.0	50.0 46.0 35.5 31.0	49.5 46.0 35.5 31.0	1650.0 1250.0 575.0 460.0
1-2 Nov 1330 - 0830	7/8	3 1 1 2	48.0 44.0 40.0 31.0	48.0 44.0 40.0 32.0	48.0 44.0 40.0 31.5	1216.7 1050.0 925.0 470.0

Table 9, cont'd.

Species: White sucker Collecting method: Gillnet Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
11-12 Jun	2/2	1	44.0	44.0	44.0	910.0
1415 - 0900		1	33.5	33.5	33.5	470.0
15 Jul	1/1	1	35.5	35.5	35.5	510.0
1230 - 1600						
17-18 Jul	1/1	1	31.0	31.0	31.0	420.0
2050 - 1000						
10 Aug	9/9	2	45.0	47.0	46.0	1480.0
0930 -		3	42.0	43.0	42.5	1050.0
1630		3	31.0	36.5	33.8	501.7
		1	23.5	23.5	23.5	165.0
10-11 Aug	8/8	1	58.0	58.0	58.0	2540.0
2030 -		5	42.0	46.5	44.2	1082.0
0830		2	32.0	36.5	34.2	580.0
12 Aug	2/2	1	32.0	32.0	32.0	400.0
0840 -		1	26.0	26.0	26.0	250.0
1330						
12-13 Aug	3/3	2	47.0	47.5	47.2	1300.0
2015 -		1	43.0	43.0	43.0	1150.0
1100						
10-11 Sep	4/7	1	45.0	45.0	45.0	1350.0
1800 -		1	38.5	38.5	38.5	830.0
1000		2	29.0	32.0	30.5	475.0
4-5 Oct	2/2	1	46.0	46.0	46.0	1250.0
1345 -		1	30.5	30.5	30.5	420.0
1045						
1-2 Nov	3/7	1	55.0	55.0	55.0	2500.0
1330 -		1	47.0	47.0	47.0	1550.0
0830		1	35.0	35.0	35.0	675.0

Table 9, cont'd.

Species: White sucker **Collecting method:** Trawl **Depth:** 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
11 Aug 2215 - 2225	1/1	1	21.0	21.0	21.0	150.0
9 Sep 1400 - 1410	1/1	1	43.5	43.5	43.5	1800.0
19 Oct 1431 - 1441	1/1	1	10.5	10.5	10.5	16.0

Table 9, cont'd.

Species: White sucker Collecting method: Trawl Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
1 Nov 2011 - 2021	1/1	1	48.5	48.5	48.5	1080.0

Table 9, cont'd.

Species: White sucker Collecting method: Seine Depth: 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
13 Jul 2115 - 2120	1/1	1	22.5	22.5	22.5	150.0
13 Jul 2130 - 2135	1/1	1	25.5	25.5	25.5	195.0
6 Aug 2125 - 2132	2/2	1 1	24.5 8.0	24.5 8.0	24.5 8.0	185.0 5.0
6 Aug 2140 - 2145	1/1	1	2.5	2.5	2.5	7.0
5 Oct 1630 - 1642	1/1	1	12.0	12.0	12.0	30.0
5 Oct 2115 - 2145	4/4	1 2 1	32.0 28.0 21.0	32.0 29.5 21.0	32.0 28.8 21.0	490.0 317.5 130.0

Table 9, cont'd.

Species: Longnose sucker Collecting method: Gillnet Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
25-26 May 1800 - 0845	3/3	3	38.0	44.5	41.2	933.3
10 Aug 0930 - 1630	1/1	1	25.5	25.5	25.5	210.0
10-11 Aug 2015 - 0830	3/3	1 2	34.5 24.0	34.5 26.0	34.5 25.0	500.0 190.0
12-13 Aug 2000 - 1115	1/1	1	26.5	26.5	26.5	225.0
10-11 Sep 1800 - 1000	3/3	1 2	42.0 28.5	42.0 29.0	42.0 28.8	860.0 310.0
4-5 Oct 1330 - 1030	2/2	1 1	52.0 46.0	52.0 46.0	52.0 46.0	2100.0 1400.0
1-2 Nov 1330 - 0830	1/1	1	47.0	47.0	47.0	1400.0

Table 9, cont'd.

Species: Longnose sucker Collecting method: Gillnet Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
11-12 Jun 1415 - 0900	1/1	1	34.0	34.0	34.0	525.0
10 Aug 0930 - 1630	3/3	3	24.5	25.0	24.8	178.3
10-11 Aug 2030 - 0830	4/4	2 2	26.0 24.5	28.0 25.0	27.0 24.8	222.5 172.5
12-13 Aug 2015 - 1100	4/4	1 1 2	50.0 35.0 27.0	50.0 35.0 29.0	50.0 35.0 28.0	1500.0 540.0 267.5
1-2 Nov 1330 - 0830	4/15	1 2 1	51.5 42.5 32.5	51.5 43.5 32.5	51.5 43.0 32.5	2050.0 1262.5 480.0

Table 9, cont'd.

Species: Longnose sucker Collecting method: Trawl Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
18 Jul 2137 - 2147	1/1	1	23.0	23.0	23.0	145.0
12 Aug 2139 - 2149	1/1	1	25.0	25.0	25.0	210.0

Species: Longnose sucker **Collecting method:** Seine **Depth:** 0 - 1.5

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Table 9, cont'd.

Species: Lake trout Collecting method: Gillnet Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
1-2	12/12	4	71.0	74.0	72.5	4150.0
Nov		4	66.0	69.0	67.5	3200.0
1330 -		2	61.0	64.0	62.5	2800.0
0830		2	55.0	59.0	57.0	2250.0

Table 9, cont'd.

Species: Lake trout Collecting method: Gillnet Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
11-12 Jun 1415 - 0900	3/3	3	77.0	88.0	81.0	4158.3
10 Aug 0930 - 1630	1/1	1	21.0	21.0	21.0	80.0
10-11 Aug 2030 - 0830	1/1	1	62.0	62.0	62.0	3150.0
4-5 Oct 1345 - 1045	2/2	2	62.0	66.0	64.0	2600.0
1-2 Nov 1330 - 0830	1/1	1	71.0	71.0	71.0	4000.0

Table 9, cont'd.

Species: Lake trout Collecting method: Trawl Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
11 Jun 1606 - 1616	1/1	1	12.5	12.5	12.5	15.0

Table 9, cont'd.

Species: Lake trout **Collecting method:** Trawl **Depth:** 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
11 Jun 1710 - 1720	1/1	1	11.5	11.5	11.5	13.0

Table 9, cont'd.

Species: Lake trout Collecting method: Seine Depth: 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
28 Jun 2030 - 2050	1/1	1	13.0	13.0	13.0	12.0
28 Jun 2050 - 2110	8/8	8	11.0	14.5	12.8	13.8
28 Jun 2200 - 2230	5/5	1 4	15.5 10.5	15.5 11.5	15.5 11.0	- -
1 Nov 2020 - 2040	1/1	1	64.0	64.0	64.0	2900.0
11 Jun 1710 - 1720	1/1	1	11.5	11.5	11.5	13.0

Table 9, cont'd.

Species: Chinook salmon Collecting method: Gillnet Depth: 6.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
10-11 Sep 1800 - 1000	1/1	1	19.5	19.5	19.5	80.0

Table 9, cont'd.

Species: Chinook salmon Collecting method: Gillnet Depth: 9.1

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
10-11 Sep 1800 - 1000	1/1	1	22.5	22.5	22.5	120.0
4-5 Oct 1345 - 1045	2/2	2	24.5	25.5	25.0	210.0

Table 9, cont'd.

Species: Chinook salmon Collecting method: Seine Depth: 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
28 Jun 2030 - 2050	15/15	15	8.5	10.5	9.5	-
28 Jun 2050 - 2110	7/7	7	8.5	11.5	10.0	12.9
13 Jul 2100 - 2115	1/1	1	11.5	11.5	11.5	17.0
13 Jul 2115 - 2120	4/4	4	10.0	11.5	10.8	13.8
13 Jul 2130 - 2135	3/3	3	10.5	12.5	11.5	16.7

Table 9, cont'd.

Species: Rainbow trout Collecting method: Seine Depth: 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt. (g)
13 Jul 2100 - 2115	2/2	2	12.0	13.0	12.5	19.5
13 Jul 2130 - 2135	1/1	1	17.0	17.0	17.0	50.0
14 Jul 1330 - 1341	1/1	1	12.0	12.0	12.0	19.0
10 Aug 0940 - 0945	2/2	1 1	17.5 14.5	17.5 14.5	17.5 14.5	45.0 30.0
10 Aug 0956 - 1002	2/2	1 1	45.0 10.5	45.0 10.5	45.0 10.5	1120.0 17.0
12 Aug 2030 - 2040	1/1	1	12.5	12.5	12.5	21.0
12 Aug 2110 - 2120	3/3	1 2	17.0 13.5	17.0 14.5	17.0 14.0	50.0 30.0
12 Aug 2135 - 2145	1/1	1	11.0	11.0	11.0	20.0
10 Sep 1435 - 1440	1/1	1	19.0	19.0	19.0	100.0
5 Oct 1602 - 1610	1/1	1	14.0	14.0	14.0	35.0
5 Oct 1650 - 1710	1/1	1	17.0	17.0	17.0	30.0
5 Oct 2115 - 2145	1/1	1	15.5	15.5	15.5	45.0
1 Nov 1545 - 1600	6/6	2 1 3	48.0 43.0 21.0	48.5 43.0 24.0	48.2 43.0 22.5	1512.5 1000.0 136.7

Species: Rainbow trout **Collecting method:** Seine **Depth:** 0 - 1.5

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Table 9, cont'd.

Species: Emerald shiner Collecting method: Seine Depth: 0 - 1.5

Date & Time	No. sampled/ Total No. Caught	No. fish	Min. lgth(cm)	Max. lgth(cm)	Mean lgth(cm)	Mean wgt.(g)
7 Sep 2053 - 2100	12/12	11 1	6.5 5.0	7.5 5.0	7.0 5.0	3.1 2.0
7 Sep 2105 - 2115	6/6	6	5.5	8.5	7.0	2.8
7 Sep 2200 - 2205	1/1	1	6.5	6.5	6.5	2.0
5 Oct 1630 - 1642	1/1	1	7.0	7.0	7.0	3.0

Table 10. The date, location, type of gear, as well as length and weight of some less commonly captured species in the Cook Plant area. Fish were captured from May to November, 1972.

<u>Species</u>	<u>Date</u>	<u>Gear</u>	<u>Time Started</u>	<u>Sta- tion</u>	<u>Length (mm)</u>	<u>Weight (g)</u>
Longnose dace	28 Jun	Seine	2200	B	8.5	5.0
	13 Jul	Seine	2115	A	5.5	2.0
	15 Jul	Seine	1355	B	6.5	3.0
	15 Jul	Seine	1355	B	7.0	3.0
	18 Jul	Seine	2130	B	6.0	2.5
	10 Aug	Seine	0956	A	6.5	3.0
	10 Aug	Seine	0956	A	8.5	6.0
	12 Aug	Seine	2050	A	5.5	3.0
	12 Aug	Seine	2050	A	6.5	3.3
	12 Aug	Seine	2050	A	6.5	3.3
	12 Aug	Seine	2050	A	8.0	4.0
	12 Aug	Seine	2135	B	5.5	2.0
	7 Sep	Seine	2105	A	6.5	2.0
	7 Sep	Seine	2130	A	4.0	0.5
Carp	10-11 Aug	Gillnet	2030	D	67.5	5,300.0
	11 Aug	Trawl	2215	C	70.0	8,200.0
	12 Aug	Trawl	1513	D	75.0	10,000.0
	12-13 Aug	Gillnet	2000	C	68.0	6,150.0
	12-13 Aug	Gillnet	2000	C	70.0	7,700.0
	4-5 Oct	Gillnet	1330	C	54.0	4,000.0
	4-5 Oct	Gillnet	1330	C	61.0	5,000.0
	4-5 Oct	Gillnet	1345	D	53.5	4,050.0
Lake herring	5 Oct	Seine	2115	A	50.5	4,000.0
	17 Jul	Gillnet	2050	D	27.0	190.0
	10 Aug	Seine	0940	A	4.0	1.0
	10 Aug	Seine	1059	B	4.0	1.0
	13 Aug	Seine	1605	A	4.0	1.0
	10 Sep	Seine	1423	A	5.5	1.0
	5 Oct	Seine	1630	A	8.0	4.0
	1 Nov	Trawl	2123	C	7.0	3.0
Coho salmon	28 Jun	Seine	2030	A	9.5	10.0
	28 Jun	Seine	2050	A	7.5	10.0
	28 Jun	Seine	2050	A	8.0	10.0
	28 Jun	Seine	2050	A	8.5	10.0
	28 Jun	Seine	2200	B	11.5	-
	28 Jun	Seine	2200	B	9.5	-
	10-11 Sep	Gillnet	1800	D	28.0	225.0
	5 Oct	Seine	1602	A	18.5	40.0
	1-2 Nov	Gillnet	1330	C	33.0	500.0

Table 10, cont'd.

<u>Species</u>	<u>Date</u>	<u>Gear</u>	<u>Time Started</u>	<u>Sta- tion</u>	<u>Length (mm)</u>	<u>Weight (g)</u>
Mottled sculpin	11 Jun	Trawl	1606	C	4.0	0.5
	28 Jun	Seine	2200	B	8.5	8.0
	9 Sep	Trawl	2044	C	5.0	2.0
	9 Sep	Trawl	2044	C	2.0	0.5
	9 Sep	Trawl	2107	C	2.0	0.5
	19 Oct	Trawl	1944	D	3.0	0.8
	19 Oct	Trawl	2008	D	3.5	1.0
	1 Nov	Trawl	2037	D	3.5	0.8
	1 Nov	Trawl	2037	D	4.5	1.0
	1 Nov	Trawl	2037	D	5.0	2.0
Bloater	11 Jun	Trawl	1710	D	16.5	37.0
	11 Jun	Trawl	1606	C	10.5	10.0
	11 Jun	Trawl	1606	C	8.5	8.0
	11 Jun	Trawl	1606	C	10.0	8.3
	11 Jun	Trawl	1606	C	11.2	8.6
	18 Jul	Trawl	2137	D	11.0	15.0
	18 Jul	Trawl	2159	D	12.5	20.0
Brown trout	25 May	Gillnet	1340	C	30.5	380.0
	10 Aug	Seine	1012	A	16.0	45.0
	10-11 Aug	Gillnet	2030	D	40.0	960.0
	12-13 Aug	Gillnet	2015	D	55.0	3,300.0
	12-13 Aug	Gillnet	2015	D	37.0	750.0
	1-2 Nov	Gillnet	1330	C	47.0	1,400.0
	1-2 Nov	Gillnet	1330	C	43.0	1,000.0
Ninespine stickleback	11 Jun	Trawl	1606	C	6.0	1.9
	11 Jun	Trawl	1606	C	6.2	2.0
	11 Jun	Trawl	1710	D	6.8	2.0
Channel catfish	4-5 Oct	Gillnet	1345	D	32.0	310.0
	1 Nov	Trawl	2100	C	17.5	60.0
Smallmouth bass	28 Jun	Seine	2200	B	21.5	140.0
Quillback	13 Jul	Seine	2130	A	38.5	820.0
Lake sturgeon	18-19 Jul	Gillnet	2045	C	100.0	10,200.0
Lake chub	9 Sep	Trawl	1430	C	13.0	20.0
	9 Sep	Trawl	1430	C	7.0	4.0

Table 10, cont'd.

<u>Species</u>	<u>Date</u>	<u>Gear</u>	<u>Time Started</u>	<u>Sta- tion</u>	<u>Length (mm)</u>	<u>Weight (g)</u>
Northern pike	5 Oct	Seine	1602	A	16.5	20.0
Green sunfish	5 Oct	Seine	1720	B	6.0	15.0
Slimy sculpin	19 Oct	Trawl	1944	D	8.5	12.0
Gizzard shad	1 Nov	Seine	2020	A	13.5	30.0

Table 11. A numerical (sometimes visual) estimate of the abundance of fry captured in seines pulled along 61 m of shoreline during 1972. Numbers and estimates represent a mean of the number of hauls for that month pooled over stations A and B.

Month	No. of Hauls	Spottail Shiner	Alewife	Smelt
Jun	3	0	0	0
Jul	11	0	0	0
Aug	22	numerous	numerous	numerous
Sep	10	some	numerous	some
Oct	6	0	2000	0
Nov	7	0	0	0

Table 12. Number of larval fish found in three 10 minute larval tow samples collected during May to November, 1972. Temperature at the towing depth is also given.

Species	Station	5/24-25*	Sampling Dates			
			6/13	9/10	10/19	11/2
Yellow Perch	C	0	3	0	0	0
	D	-	3	0	0	0
Alewife	C	0	0	0	0	0
	D	-	0	0	1	0
Rainbow Smelt	C	1	2	0	0	0
	D	-	0	0	0	0
<hr/>						
Temperature (C)	Sta. C	10.9	16.0	17.8	11.9	11.0
	Sta. D	-	16.3	18.1	11.0	11.0

*One replicate tow 7 miles south of the Cook Plant contained no fish larvae

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